TOSHIBA

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SERVICE MANUAL

COLOUR TELEVISION

VR9PJ Chassis

43CVR9UR
50CVR9UR

Dec., 2003

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CHAPTER 1 GENERAL ADJUSTMENTS

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is (A) kV at zero beam current (minimum brightness) under a (C) V AC power source. The high voltage must not, under any circumstances, exceed (B) kV.

   Refer to table-1 for high voltage (A), (B) & AC voltage (C). (See SETTING & ADJUSTING DATA on page 33)

   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
3. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

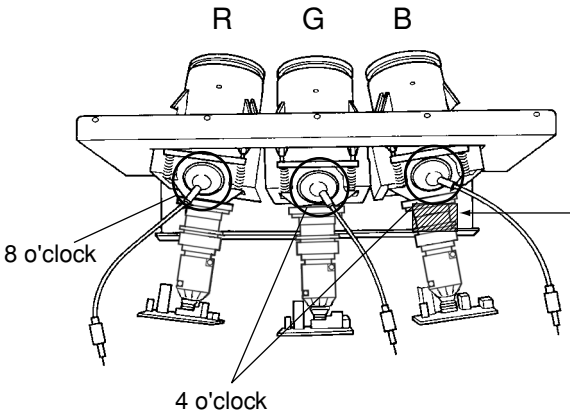
1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.

PRODUCT SAFETY NOTICE

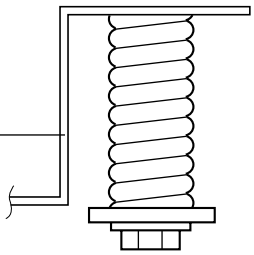
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

CRT ASSEMBLY REPLACEMENT AND MOUNTING

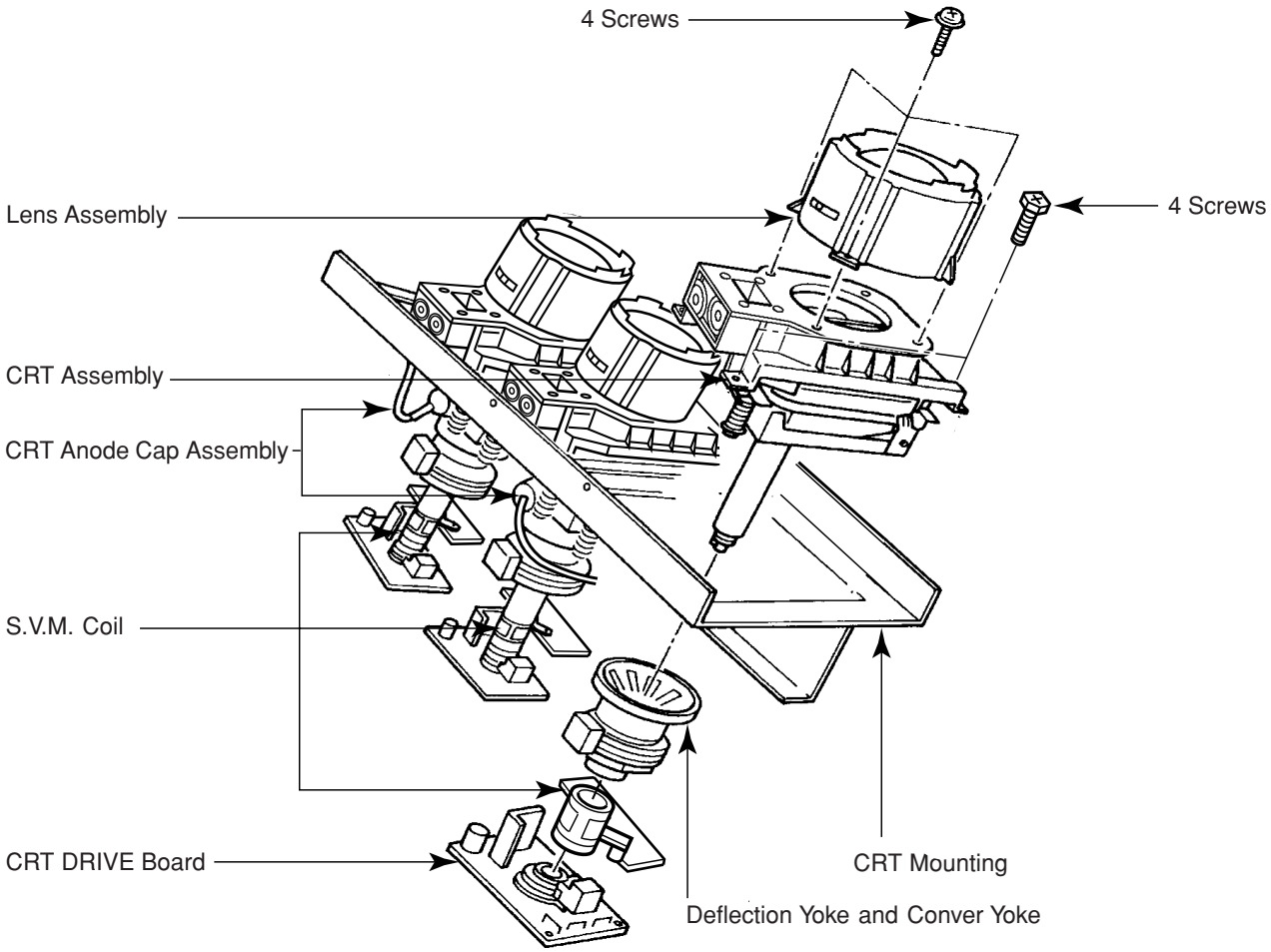
CAUTION : DO NOT LOOSEN THE HEX HEAD BOLTS WITH SPRINGS (12 PCS), BECAUSE THOSE ARE FOR SEALING OF CRT COOLANT.



Attention Serviceman



The Hex Head Bolts with Springs. (see sketch) used on CRT assembly, are "NOT" Adjustment Screws DO NOT LOOSEN-FLUID LEAKAGE WILL OCCUR.



Lens and Neck Components View

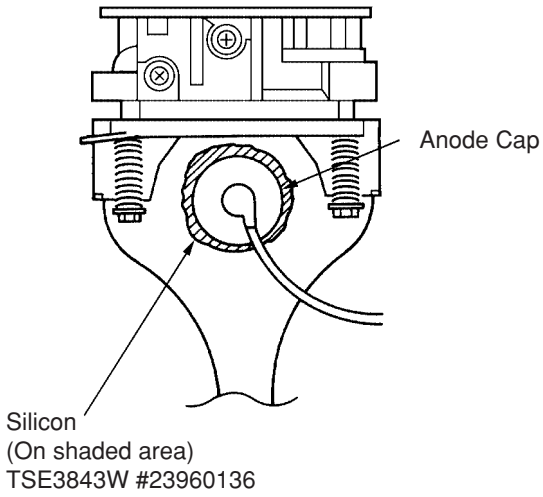
TO REMOVE CRT (Same procedure for R, G, B)

1. Remove CRT DRIVE Board, S. V. M. COIL and DEF. YOKE from CRT.
2. Remove Lens Assembly.
3. Detach CRT Anode Cap from CRT.
4. Remove CRT Assembly from CRT Mounting.

CRT REPLACEMENT (Same procedure for R, G, B)
Reverse the removal procedures except the followings.

1. Anode Cable should be replaced with new one. See "SERVICING PRECAUTIONS" shown below.
2. Install silicon (T461B) to the CRT, replace the Anode cable and put enough silicon again on around the Anode Cap as illustrated.

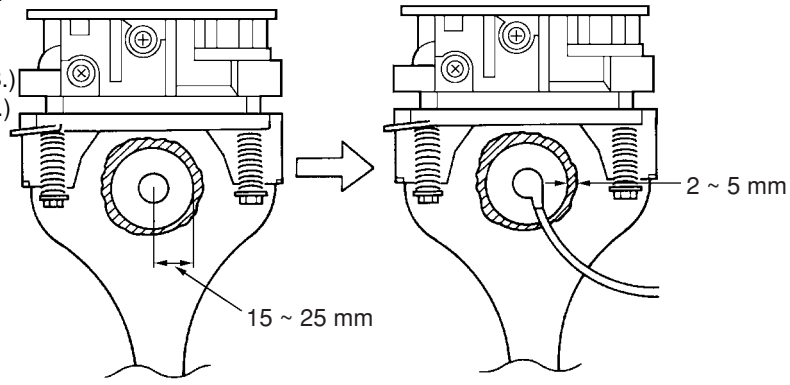
CAUTION: Align the Anode cable as illustrated on page 4.



ADJUSTING PROCEDURE IN REPLACING CRT

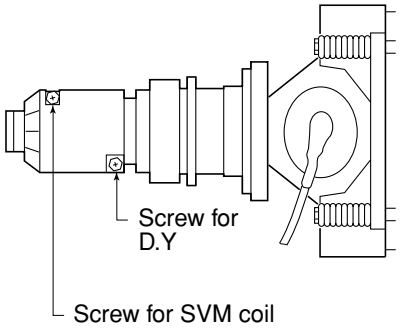
1. R.G.B. CUTOFF (SCREEN VR) ADJUSTMENT (page 6.)
2. R.G.B. FOCUS ADJUSTMENT (page 6.)
3. PICTURE TILT ADJUSTMENT (page 7.)
4. USER CONVERGENCE CENTER CHECK (Refer to owner's manual.)
5. CENTERING ADJUSTMENT (page 7.)
6. CONVERGENCE ADJUSTMENT (page 18.)
7. WHITE BALANCE ADJUSTMENT (page 14.)

Adjustments are complete.



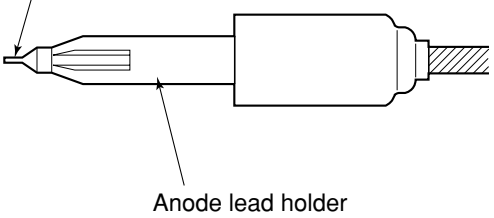
SERVICING PRECAUTIONS

■ Do not use a magnetized screw driver for screws of Deflection Yoke and Velocity Modulation Coil to avoid magnetization of electron gun. Magnetization of electron gun will degrade basic function and result in unbalance of right and left shift of user static convergence, and result in no variable quantity.



■ When replacing the anode cap assembly (CRT) or anode lead assembly (F.B.T.), remove the anode lead holder from old one and attach the holder again to new anode lead.

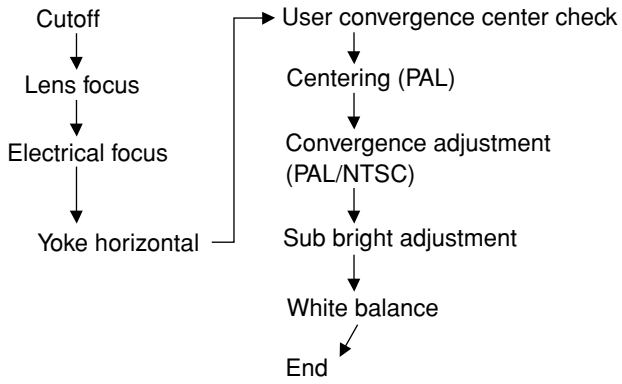
■ Check the point of anode lead in a straight line, if it is winding, please revise it.



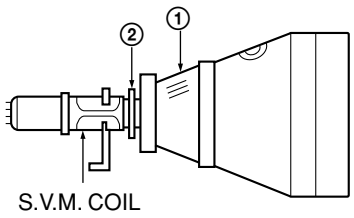
WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

PICTURE TUBE COMPONENTS ADJUSTMENT

ADJUSTING PROCEDURE IN REPLACING CRT



DESCRIPTION OF NECK COMPONENTS



① Deflection yoke and convergence yoke.
The position on the neck is required most front (CRT funnel side) and the screw is fastened after rotating yoke adjusting picture tilt.

② Centering magnet
After adjusting picture tilt, picture position is finally fixed by this magnet.
In order to get maximum margin of user convergence control for center of screen, this magnet have to be used for center convergence adjustment.

PREPARATION
Operate the receiver for at least 5 minutes.

R, G, B CUTOFF (SCREEN VR) ADJUSTMENT

1. Adjust before replace the screen assembly.
2. Set user control to reset position.
   (CONTRAST → Max
   BRIGHTNESS, COLOR, TINT → Center.)
3. Call up the adjustment mode display, then select the item RCUT.
4. Adjust the data of items **RCUT**, **GCUT**, and **BCUT** to "40H".
5. Press the ⊖ button on PJTV. (Y-MUTE : ON)
6. Gradually rotate R, G and B screen volume of FOCUS PAC clockwise or counterclockwise until the raster appears slightly on the CRT through the each lens, and leave them.
   (Looking to the lens in order to check the raster.)
7. Press the ⊖ button on PJTV. (Return to Normal Picture)

RGB FOCUS ADJUSTMENT

1. Call-up the adjustment mode (see page 10)
2. Press ⊖ button on the remote controller in order to display the internally-generated white cross-hatch (or white cross-dot). (White cross-hatch or white cross-dot on a black background. See TEST SIGNAL SELECTION on page 11.)
3. Expose only RED by covering the GREEN and BLUE lenses with caps.
4. Loosen the RED lens fixing screws (refer to Fig. a), and adjust the RED lens focus to obtain the sharpest point while observing the middle and peripheral sections of the screen.

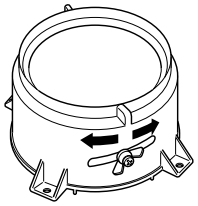


Fig. a

5. Use the focus VR of "R" of the focus pack in order to adjust the electric focus in the middle and peripheral sections of the screen to its sharpest level.
6. Check the RED focus of the whole screen and if necessary repeat steps 4 and 5.
7. Fix the RED lens by tightening its fixing screws.
8. Expose only GREEN by covering the RED and BLUE lenses with caps.
9. Display the internally-generated white cross-hatch (or white cross-dot) signal.
10. Adjust the GREEN lens focus on the left border of the screen to its sharpest level, then check the focus on the right border, and if it is at its sharpest level, fix it in that position by tightening the lens screws.

    (1) If the horizontal line toward the right border is red-flared, turn the lens screw slightly right in order to balance it with the left border. (After adjustment, the left border tends to be slightly green-flared, and the right border tends to be slightly red-flared.)
    (2) If the horizontal line toward the right border is green-flared, turn the lens screw slightly left in order to balance it with the left border. (After adjustment, the left border tends to be slightly red-flared, and the right border tends to be slightly green-flared.)

Note: The aim of the above-described adjustment procedure for the Green lens focus is to obtain the best lens focus after 2 - 3 hours of warming up taking into account the focus drift; it applies if the warming up time before the adjustment is less than 30 minutes. (The horizontal line in the screen middle section tends to be slightly red-flared.)

In case of warming up of more than 2 hours under a condition that the large anode current is running through the projection tube so that for example the all-white pattern appears, adjust to obtain the sharpest focus while observing the whole screen like in the RED case.

11. Use the focus VR of "G" of the focus pack in order to adjust the electric focus in the middle section of the screen to its sharpest level.

Note: Normally the most clearly visible point of the scanning line is the sharpest point of the Green focus, however as the characteristics vary depending on the projection tube, the sharpest focus points of the vertical and horizontal lines may not match each other, thus when you turn the focus VR, if the picture tends to be tremendously unstable (rolls horizontally or vertically), adjust the balance of the vertical and horizontal lines to its best position.

12. Check the GREEN focus of the whole screen and if necessary repeat steps 10 and 11.
13. Fix the GREEN lens by tightening up its fixing screws.
14. Expose only BLUE by covering the RED and GREEN lenses with caps.
15. Display the internally-generated black cross-hatch.
16. Loosen the BLUE lens fixing screws (refer to Fig. a), and adjust the BLUE lens focus while observing the middle and peripheral screen sections.
17. Use the focus VR of "B" of the focus pack in order to adjust the focus in the middle section of the screen to its sharpest level.
    (The point of the Blue focus becomes sharpest when the brightness level of BLUE is lowest, the cross-hatch is clearly visible.)

Note: Keep in mind that only the BLUE electric focus is adjusted with the black cross-hatch.

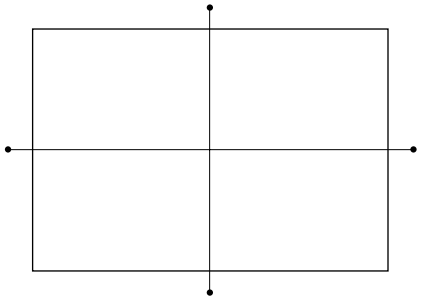
18. Check the BLUE focus of the whole screen and if necessary repeat steps 17 and 19.
19. Fix the BLUE lens by tightening its fixing screws.

TILT ADJUSTMENT

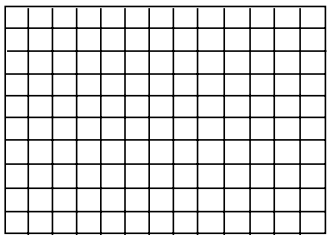
Rotate R, G, B deflection yoke so that picture becomes horizon, then fasten screw.

CENTERING ADJUSTMENT

1. Stretch a thread between two center of screen edge (top and bottom, left and right).



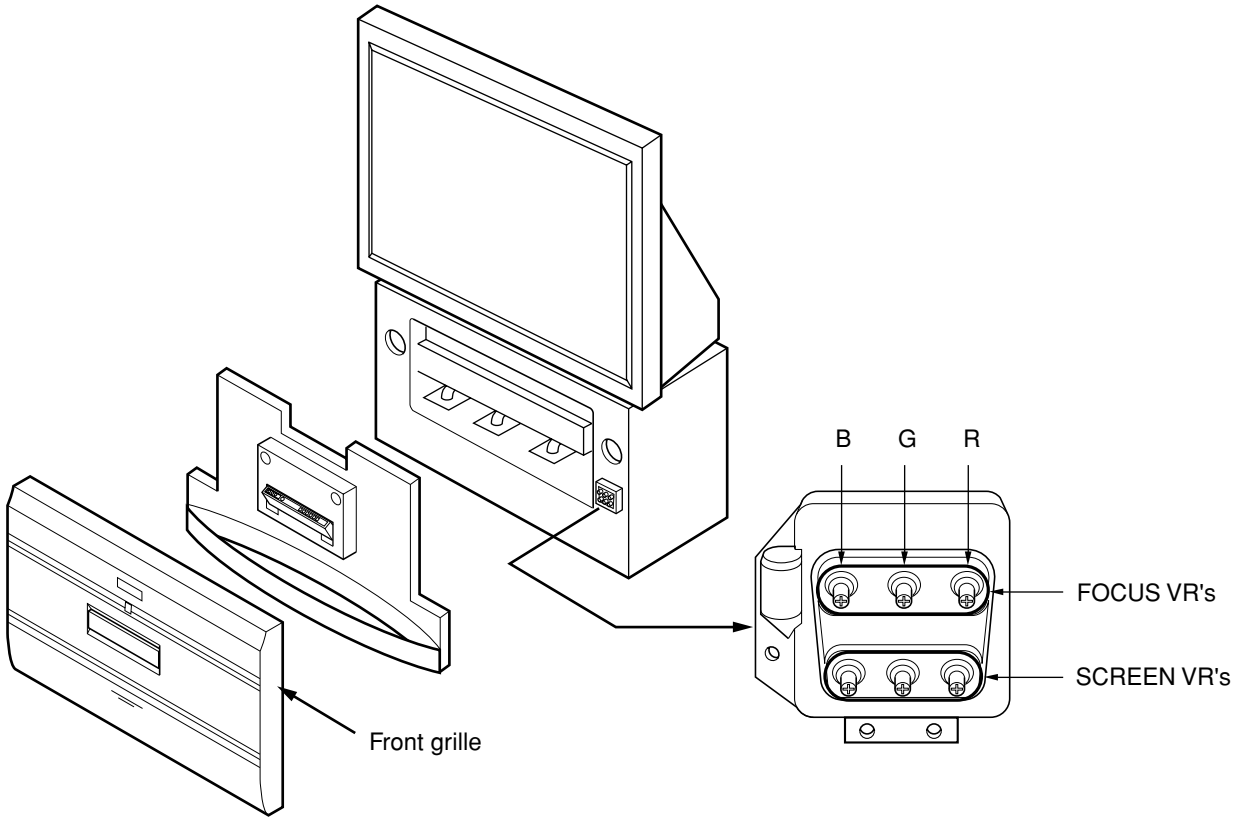
2. Select the adjustment mode. (See page 10.)
3. Press TV/VIDEO button on the Remote Control to display the black cross-hatch.



4. Adjust G centering magnet so that the cross-hatch pattern center comes to screen center.
5. Perform HEIGHT adjustment . (See page 14.)
6. Perform WIDTH adjustment. (See page 14.)
7. Check whole quality of green line.
8. Adjust R, B centering magnet so that the cross-hatch pattern center comes to screen center.

LOCATION OF SCREEN AND FOCUS VR'S

To remove the Speaker grille and Front panel.



REPLACEMENT OF HIGH VOLTAGE CABLE

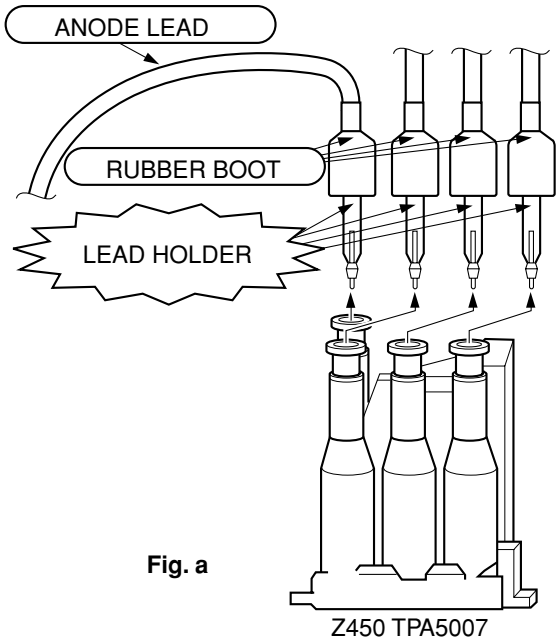


Fig. a

1. When replacing Anode Lead or Anode Cap with new one, remove Lead Holder from old lead as shown in figure below, and put it on new lead. Do not throw away Lead Holder.

NOTE : THE LEAD HOLDER IS ATTACHED TO TPA5007 (Z450), BUT IS NOT ATTACHED TO ANODE LEAD AND ANODE CAP. RUBBER BOOT IS ATTACHED TO ANODE LEAD AND ANODE CAP.

2. Detaching Lead Holder

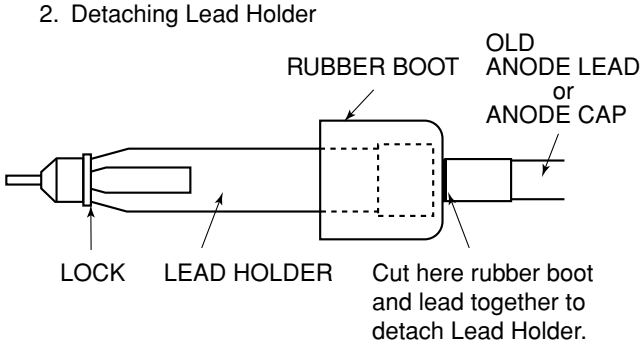


Fig. b

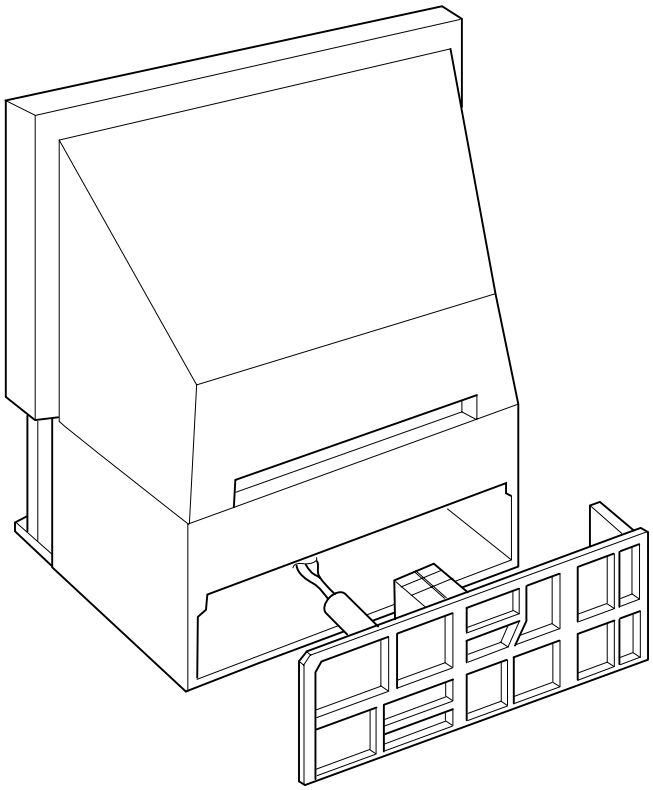
WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

SERVICE POSITION

In order to assure the performance, processed wires shall be replaced after the repair work.
Work procedures are as follows:

1. Remove the back board.
2. Remove lead wires.
3. Draw out the chassis.

After repair work finished, replace it in the opposite procedure.



SERVICE MODE

1. ENTERING TO SERVICE MODE

1) Press 🔇 button once on Remote Control.

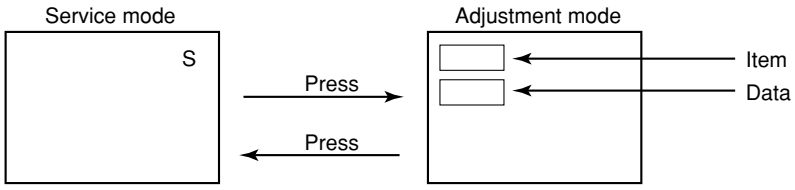
2) Press 🔇 button again to keep pressing.

3) While pressing the 🔇 button, press MENU button on TV set.

(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



3. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

Screen adjustment mode ON/OFF:	-/-- ("Info") button (on Remote)
Test signal selection :	⊖ button (on Remote)
Selection of the adjustment items :	Channel ▲/▼ (on TV or Remote)
Change of the data value :	Volume ◿ +/– (on TV or Remote)
Adjustment menu mode ON/OFF :	MENU button (on TV)
Initialization of the memory (QA02) :	CALL + Channel button on TV (▲)
Reset the count of operating protect circuit to “00”:	CALL + Channel button on TV (▼)
“RCUT” selection :	1 button
“GCUT” selection :	2 button
“BCUT” selection :	3 button
“SCNT” selection :	4 button
“COLC” selection :	5 button – – – – – Color thickness correction
“TNTC” selection :	6 button note: Displayed differently as shown below, depending on the setting of the receiving color system.
Convergence adj :	YELLOW button COLP (PAL)
Self diagnostic display ON/OFF :	9 button COLC (NTSC)
	COLS (SECAM)

CAUTION : Never try to perform initialization unless you have changed the memory IC.

4. SELECTING THE ADJUSTING ITEMS

1) Every pressing of CHANNEL ▲ button in the service mode changes the adjustment items in the order of table-2. (▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.
(See SETTING & ADJUSTING DATA on page 33)

5. ADJUSTING THE DATA

1) Pressing of VOLUME ◿ +/– button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

6. EXIT FROM SERVICE MODE

1) Pressing POWER button to turn off the TV once.

■ INITIALIZATION OF MEMORY DATA OF QA02

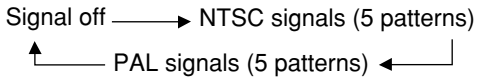
After replacing QA02, the following initialization is required.

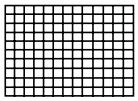
1. Enter the service mode, then select any register item.
2. Press and hold the CALL button on the Remote, then press the CHANNEL ▲ button on the TV. The initialization of QA02 has been completed.
3. Check the picture carefully. If necessary, adjust any adjustment item above. Perform “Auto search Memory” on the owner’s manual.

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

7. TEST SIGNAL SELECTION

1) Every pressing of ⊖ button on the Remote Control changes the built-in test patterns on screen as described below in SERVICE MODE.

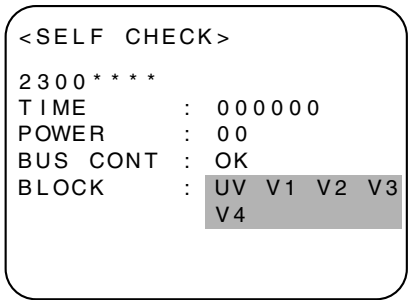


Signals	Picture
• Red raster • Green raster • Blue raster • All White	
• Black cross-hatch	

* The signals marked with ■ are not usable to display in the Test signal for some model.

8. SELF DIAGNOSTIC FUNCTION

1) Press "9" button on Remote Control during display of adjustment menu in the service mode.
   The diagnosis will begin to check if interface among IC's are executed properly.
2) During diagnosis, the following displays are shown.



Indicated color of mode now selected : Green and Red
Indicated color of other modes : White

Green : Normal
Red : The microcomputer operates to provide judgement of no video signal. The red color is still indicated though the signal is input, failure may exist in input signal line including QV01.

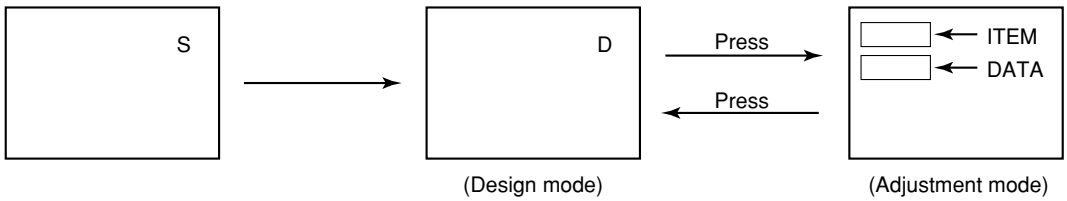
① Part number of microcomputer (QA01)
② Total hour of turn the TV on. (Unit: hour)
③ Operation number of protecting circuit ----"00" is normal.
When indication is other than "00", overcurrent is apt to flow, and circuit parts may possibly be damaged.
④ BUS CONT ----"OK" is normal.
When indication shows "Q ○○○ (Green: OK, Red: NG)", the device with the number may possibly be damaged.
⑤ BLOCK
UV : TV reception mode
V1 : VIDEO 1 input mode (→①)
V2 : VIDEO 2 input mode (→②)
V3 : VIDEO 3 input mode (→③)
V4 : VIDEO 4 input mode (→④)

* The items marked with ■ are not usable to display in the SELF DIAGNOSTIC FUNCTION for some model.

DESIGN MODE

1. ENTERING TO DESIGN MODE

1) Select the Service mode. 2) While pressing CALL button on Remote and press MENU button on TV. 3) Press MENU button on TV.



When QA02 is initialized, items “OPT0” and “OPT1” of DESIGN MODE are set to the data of the representative model of this chassis family.
Therefore, because ON-SCREEN specification remains in the state of the representative of model. This model is required to reset the data of items “OPT0” and “OPT1”.

2. SELECTING THE ADJUSTING ITEMS

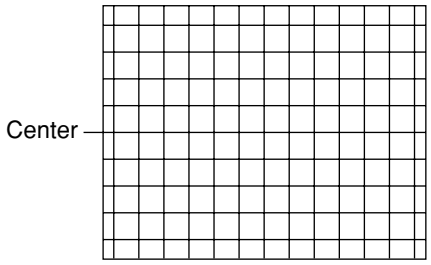
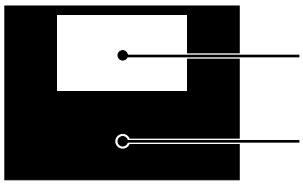
Every pressing of CHANNEL ▼ button in the design mode changes the adjustment items in the order of table-3. (▲ button for reverse order)

Refer to table-3 for data of design mode.
(See SETTING & ADJUSTING DATA on page 33)

3. ADJUSTING THE DATA

Pressing of VOLUME ▲ or ▼ button will change the value of data.

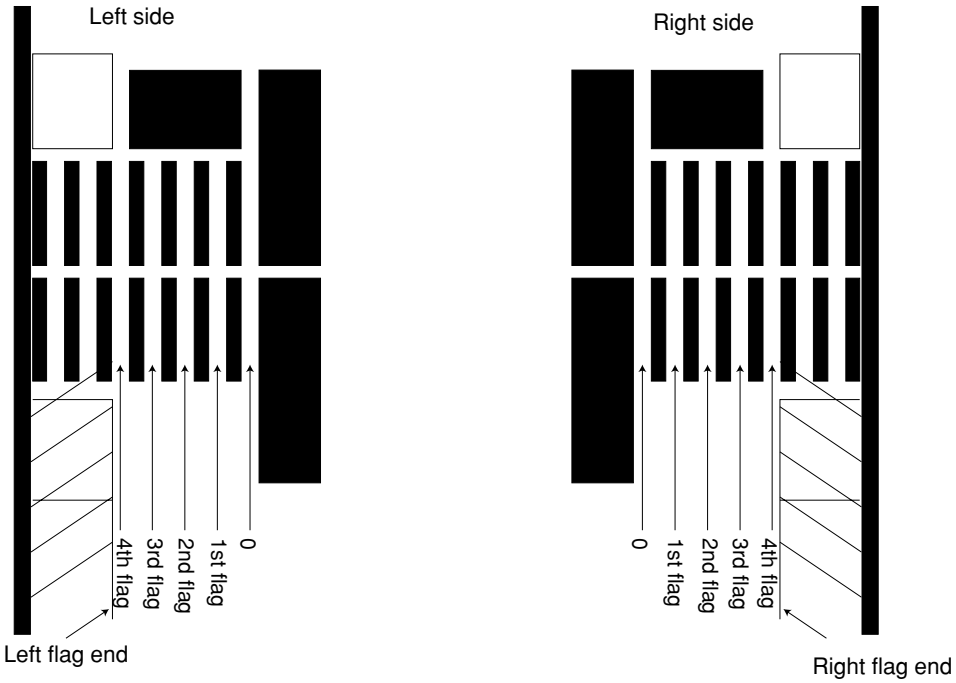
ELECTRICAL ADJUSTMENT

ITEM	ADJUSTMENT PROCEDURE
WIDTH (WID)	1. Call up the adjustment mode display, then select the item **WID**. 2. Press the VOLUME ▼ button to get the picture so the left or right edges of raster begins to lack. 3. Press the VOLUME ▲ button to advance the data by 15 steps. Note : Check the horizontal picture position is correct.
VERTICAL LINEARITY (VLIN)	1. Call up the adjustment mode display, then select the item **VLIN**. 2. Press the TV/VIDEO button on Remote until the cross-hatch pattern appears on the screen. 3. Press the VOLUME ▲ or ▼ button to obtain the picture of the best linearity 
HEIGHT (HIT)	1. Call up the adjustment mode display, then select the item **HIT**. 2. Press the VOLUME ▼ button to get the picture so the top or bottom of raster begins to lack. 3. Press the VOLUME ▲ button to advance the data by 9 steps. Note : Check the vertical picture position is correct.
WHITE BALANCE (RCUT) (GCUT) (BCUT) (RDRV) (BDRV)	Black and White pattern * There is not in the built-in test patterns. It needs to prepare the pattern genarator.  High light area Adjust "RDRV" or "BDRV" to be white. Low light area Fine adjust "RCUT", "GCUT" or "BCUT" to be black. 1. Set user control to reset position. (CONTRAST → Max BRIGHTNESS, COLOR, TINT → Center.) 2. Call up the adjustment mode display, then select the item RCUT. 3. Adjust the data of items **RCUT**, **GCUT**, and **BCUT** to "40H". 4. Press the -/-- button on Remote. (Y-MUTE : ON) 5. Gradually rotate R, G and B screen volume of FOCUS PAC clockwise or counter-clockwise until the raster appears slightly on the CRT through the each lens, and leave them. (Looking to the lens in order to check the raster.) 6. Press the -/-- button on Remote. (Return to Normal Picture) 7. Press the ⏻ button on Remote, and select the Black and White pattern. 8. Adjust the data of items **RCUT**, **GCUT** and **BCUT** for proper white-balanced picture in low light area. 9. Adjust the data of items **RDRV** and **BDRV** for proper white-balanced picture in high light area. 10. Check the white balance in both low and high light areas. If necessary, perform again steps from 8 to 9.

Items	Names	Settings	Input signals	Measuring points	Adjusting methods	Adjusting standards
SCNT	Sub-contrast	Dynamic mode	Sub-bright signal (J2ch)	TP46R	1) Adjust amplitude from the pedestal level up to the white peak.	1.80Vop
BRTC	Sub-brightness	Dynamic mode	Sub-bright signal (J2ch)	Screen adjustment	1) Adjust the number of black collapsed lines of sub-bright signals. 2) Adjust after adjusting W/B, SCNT.	4 ± 1.5 bars
COLC	Sub-color NTSC	Dynamic mode	Sub-bright signal (J2ch)	TP46B	1) Adjust the amplitude of the rainbow color bar . (Adjust the P-P value of the upper half) 2) Confirm that video muting is made. 3) Adjust the COLC after adjusting the SCNT.	1.50Vop
COLS	Sub-color SECAM	Dynamic mode	SECAM color bar (E2ch)	TP46B	1) Adjust the amplitude of the color bar. (Apply video muting at the time of adjustment) 2) Adjust the P-P value of the upper half. 3) Adjust the COLS after adjusting the COLC.	2.0Vop
Screen adjustment	Screen	Factory screen adjusting mode		CRT tubular screen	1) Darken the environment as much as possible. 2) Set to factory-set screen adjusting MODE. (Y mute, DRV.CUT=40H) 3) Directly observe the surface of Cathode Ray Tube and adjust the screen VR to the point that starts lighting. 4) Make above-mentioned adjustments for each tube of G, R, and B.	Point that starts lighting
Focus adjustment	Focus	Dynamic mode	Retma signal Dot-cross signal	Screen adjustment	1) Adjust to the best position by repeating electrical focus and optical focus adjustments. 2) Use the jig and shade the CRT except the axes under adjustment. 3) Make above-mentioned adjustments for each tube of G, R, and B..	
RDRV BDRV	Bright part W/B			Screen adjustment	1) Adjust the color temperature of the bright part (103cd/m^2).	11500k + 0.0075duV
RCUT BCUT	Dark part W/B			Screen adjustment	1) Adjust the color temperature of the dark part (17cd/m^2).	10500k + 0.0105duV
Voltage measure-ment at vertical midpoint		Dynamic mode	Philips Pattern (PAL)	Between TP-V and TP-G	1) Connect a digital voltmeter between TP-V and TP-G, and adjust it to 0 ± 10mV by VPOS data.	
Screen positioning adjustment		Dynamic mode	Philips Pattern (PAL)	Screen Set: Face to east	1) Adjust the centering magnet so that the posotion of screen is in the center of the dummy screen (cross mark).	

Items	Names	Settings	Input signals	Measuring points	Adjusting methods	Adjusting standards
HIT VLIN	Vertical amplitude adjustment	Dynamic mode	Philips Pattern (PAL)	Screen adjustment Set: Facing to the east	1) Shorten the vertical amplitude by HIT data in the beginning until upper and lower flags appear on the screen. 2) Subsequently, lengthen the vertical amplitude by HIT data until either upper or lower flag end is aligned with the screen end.	
WID (43"/50")	Horizontal amplitude adjustment	Dynamic mode	Philips Pattern (PAL)	Screen adjustment Set: Facing to the east	1) Shorten the amplitude by lowering the WID data in the beginning until the left and right flags appear comletely. 2) Lengthen the vertical amplitude so that the number of register flags on the left and right of Philips pattern will come to 7 in total (3.5 each for left and right) when added.	(See Page 19) 7 ± 1 marks
STRP	Conver Pattern Horizontal phase adjustment	Dynamic mode	Philips Pattern (PAL) 100Hz (DFS)	Screen adjustment Set: Facing to the east	1) Adjust the Conver Pattern center to the Philips Pattern center. (Adjusting the horizontal phase only)	
NSTR	Conver Pattern Horizontal phase adjustment	Dynamic mode	Retma Pattern (NTSC) 100Hz (DFS)	Screen adjustment Set: Facing to the east	1) Adjust the Retma Pattern center to the Philips Pattern center. (Adjusting the horizontal phase only)	

Viewpoint of WID (adjustment of horizontal amplitude) .... left and right flags



Adjust the WID data so that the number of register flags on the left and right of Phillips pattern will come to 7 in total when added.

Direction of adjustment: Facing to the east

CONVERGENCE ADJUSTMENT

1. PICTURE ADJUSTMENT

The adjustment can be done on 7 screens; PAL 100 Hz, PAL 625P, NTSC 525P. To synchronize correction wave to each frequency, receive the suitable signal.

Note: The convergence circuit is a circuit to eliminate screen distortion and can not make a drastic correction such as to correct entire screen size. An excessive correction may actuate the protection circuit. So a care will be necessary.

1-1. Change of Memory (E^2PROM)

Memories of E^2PROM (QH173, QH174) are nonvolatile, and used for storing adjusted data. Since data in RAM of QH100 is eliminated with power OFF, the RAM is set by soft command of micro-processor QA01 at each time of power ON. The adjusted data which is obtained from screen-watching is once stored in RAM inside QH001. The whole data in RAM which is corrected on each adjusting point and is changed, is saved into E^2PROM (QH173, QH174) as a fixed data. The data capacity per one screen requires 8k for 100 Hz, 625P mode (PAL), and 4k for 525P mode (NTSC).

1-2. Service Mode

1-2-1. Outline

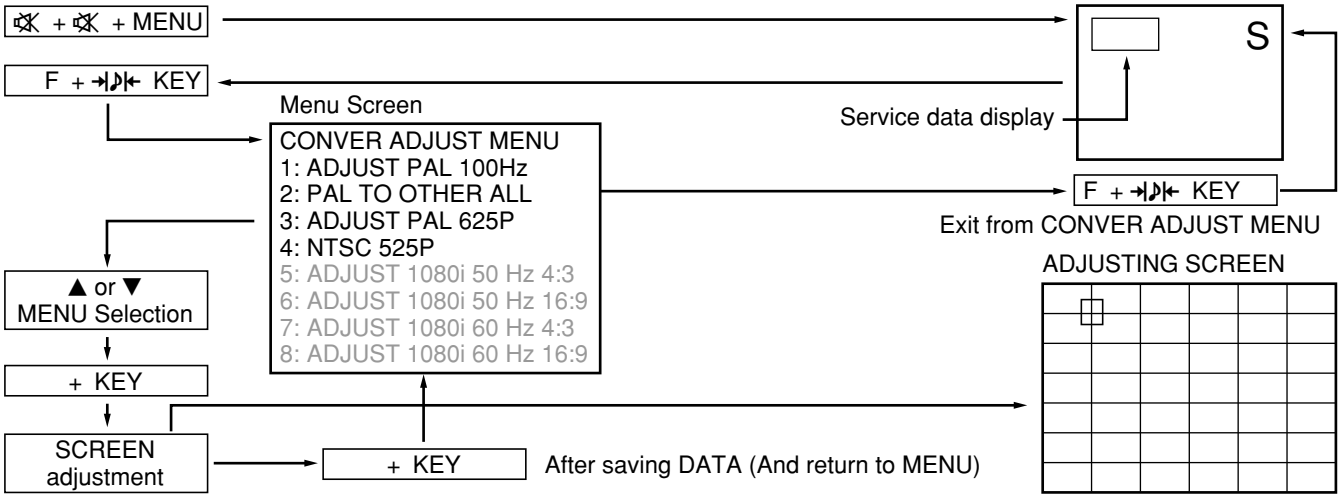
Service mode is controlled by software of micro-processor QA01, and is one of function of set.

This mode has been designed so that ordinary user cannot use this, and special operation is required to use this.

Data change is done by direct shift (cursor display) of adjusting points. 100 Hz, 625P mode (PAL) 8 x 8/1 color and 525P mode (NTSC).

1-2-2. To Enter and to Exit

Press mute (🔇) key on remote hand unit at twice, and hold it down, then press MENU key of set console. The service data will be display on the top left screen. Under this condition, press "F+⇥♪⇤" keys on remote hand unit so that the CONVER ADJUST MENU appears on the screen. Further, the screen returns to original picture when you press "F+⇥♪⇤" again.



Note:

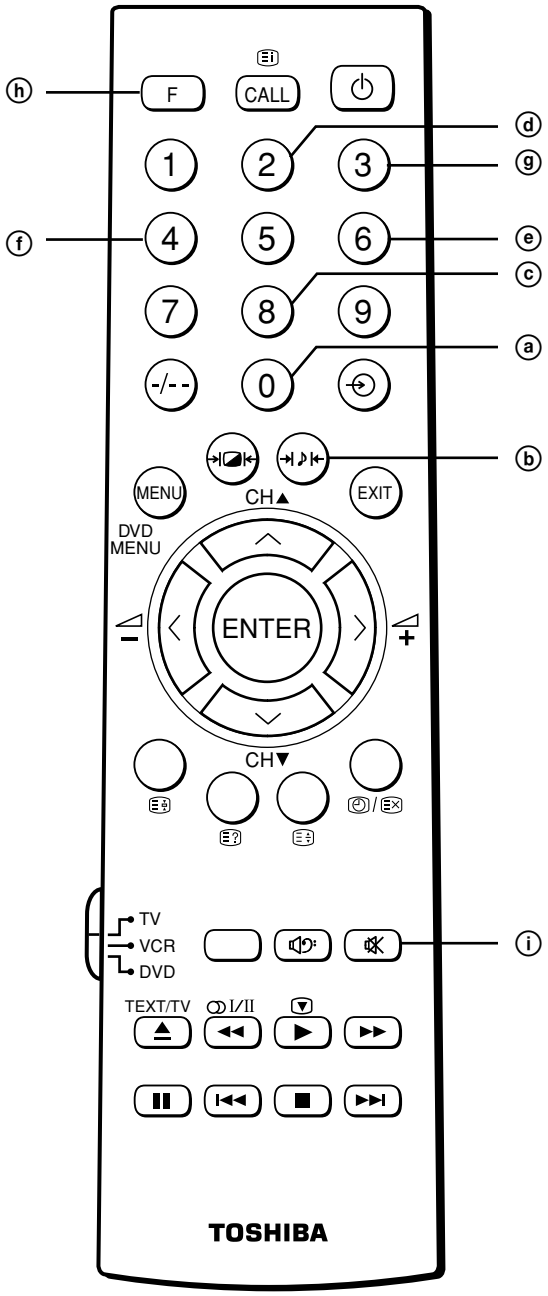
- Before proceeding to the adjustment for each screen, always perform the adjustments for vertical size (HIT) and horizontal size (WID) with the main deflection data changed.
- This model does not display 1080i (50/60Hz). Therefore, you can not select the items 5 through 8.

1-2-3. Adjustment menu

- Before adjusting convergence, make sure that the main adjustment has been done correctly.
- To do the adjustment for each mode of NO.1, 3-8, the suitable signal and picture mode corresponding with each mode are necessary.
- Basing on the data of PAL 100Hz, the other data of whole modes can be calculated and saved after entering ''PAL TO ATHER ALL'' in NO.2. Never do this unless there is a excessive deviation, otherwise a data other than PAL 100 Hz may be overwritten in.

No.	Item	Description
1	ADJUST PAL 100Hz	Allows manual adjustment in PAL mode. Perform the adjustments according to dimensions specified.
2	PAL TO OTHER ALL	Automatically saves auxiliary forecasted data by referring PAL 100Hz screen. The calculated data are saved on PAL 625P, NTSC 525P screens, and then the operation completes. In this case, PAL 625P, NTSC 525P screens are created through the calculation process. Perform check in manual mode, and correct them if there are some problems in color deviation, distortion, etc.. Take care that PAL 625P, NTSC 525P screens will be modified again when adjusting with this menu selected.
3	ADJUST PAL 625P	Allows manual adjustment for PAL 625P screen. Select this mode when performing adjustment for color matching and correction of distortion for PAL 625P are required. Perfom the adjustments according to dimensions specified.
4	ADJUST NTSC 525P	Allows manual adjustment for NTSC 525P screen. Select this mode if color adjustment and distortion correction for NTSC 525P are necessary. Perfom the adjustments according to dimensions specified.

2. KEY FUNCTION OF REMOTE CONTROL UNIT



ⓐ 0 key ..... Green test pattern ON/OFF

ⓑ ⇥♪⇤ key ..... Mode picture change over

ⓒ 8 key ..... Cursor down / adjusting point down

ⓓ 2 key ..... Cursor up / adjusting point up

ⓔ 6 key ..... Cursor right / adjusting point right

ⓕ 4 key ..... Cursor left / adjusting point left

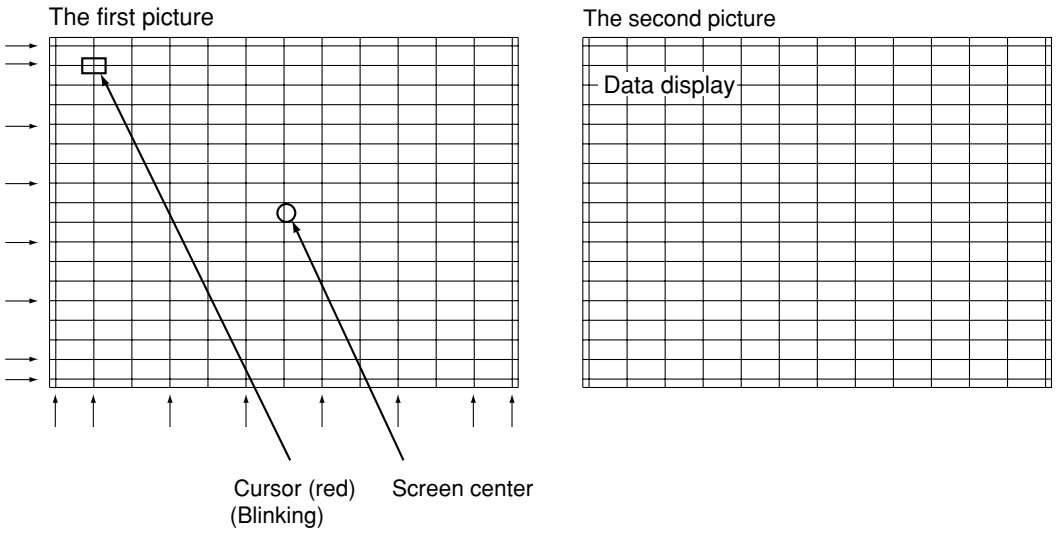
ⓖ 3 key ..... Cursor color change

ⓗ F key ..... Push this key and ⓘ key to enter the convergence menu

ⓘ 🔇 key ..... Push this key twice and the set console menu key to enter the service mode.

3. Picture

a) 100 Hz, 625P mode (PAL) . . . . Correcting point: Horizontal 8 × Vertical 8 (Arrow marks denote correcting point)



The first picture

Crosshatch pattern. Pattern colors are three color display. Cursor is blinking in red. When changed, condition is last memory state.

Cursor is ..... Data change mode in lighting,
Cursor shifting mode in blinking.
Cursor color Red: Yellow
Green: Green
Blue: Blue

Display color shows the color that data change is possible.

The second picture

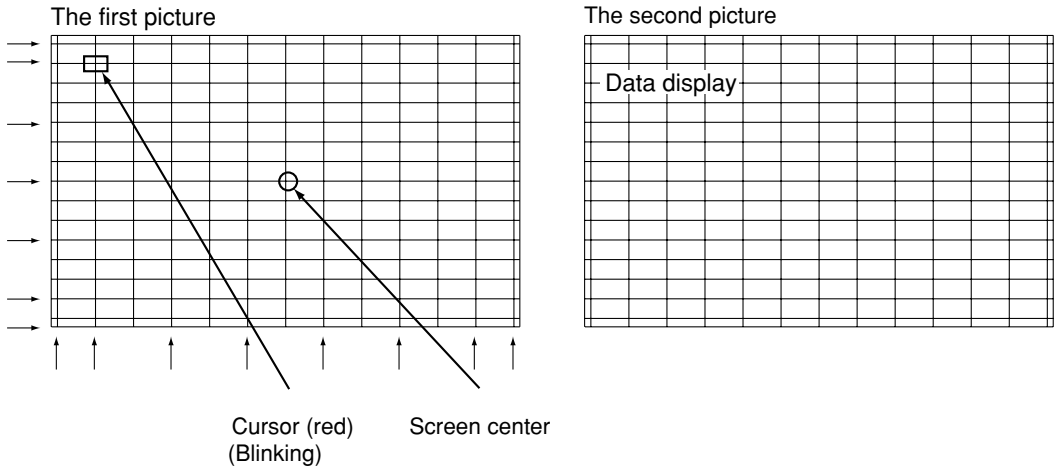
When entering from the first picture to the second picture, correcting wave of convergence is muted for one second.
During this period, the changed data is transferred from RAM QH001 to QH713 (PAL 100Hz) QH714 (PAL 625P), and saved.

The second picture is indicated with data on top left of the first picture, therefore, convergence cannot be adjusted by this picture.

Caution:

- Receive suitable signal for adjustment.
- Be sure to check if centering is adjusted correctly before adjusting convergence.

b) 525P mode (NTSC) . . . . Correcting point: Horizontal 8 × Vertical 7
(Arrow marks denote correcting point)



The first picture

Crosshatch pattern. Pattern colors are three color display. Cursor is blinking in red. When changed, condition is last memory state.

Cursor is ..... Data change mode in lighting,
Cursor shifting mode in blinking.
Cursor color Red: Yellow
Green: Green
Blue: Blue

Display color shows the color that data change is possible.

The second picture

When entering from the first picture to the second picture, correcting wave of convergence is muted for one second.

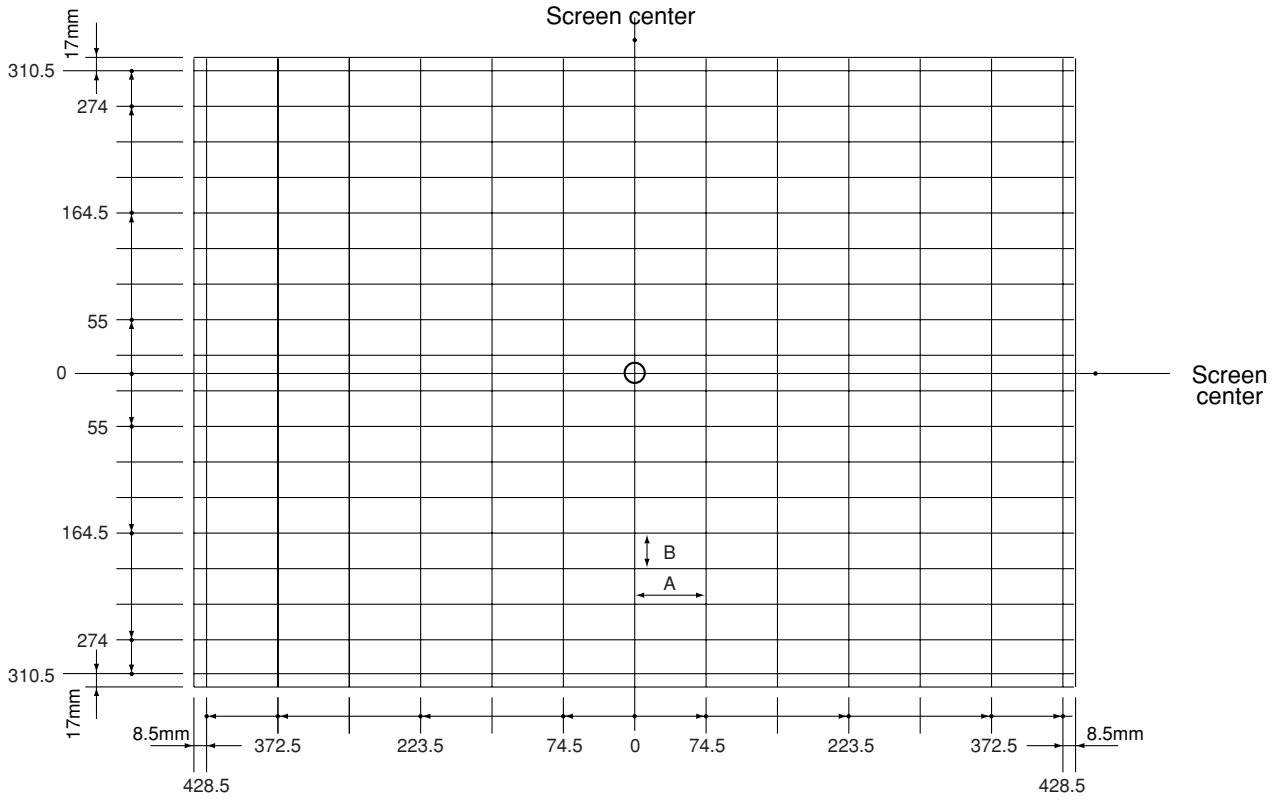
During this period, the changed data is transferred from RAM QH001 to E^2PROM, QH174 (NTSC 525P), and saved.
The second picture is indicated with data on top left of the first picture, therefore, convergence cannot be adjusted by this picture.

Caution:

- Receive suitable signal for adjustment.

4. ADJUSTING PICTURE DIMENSION (GREEN PICTURE)

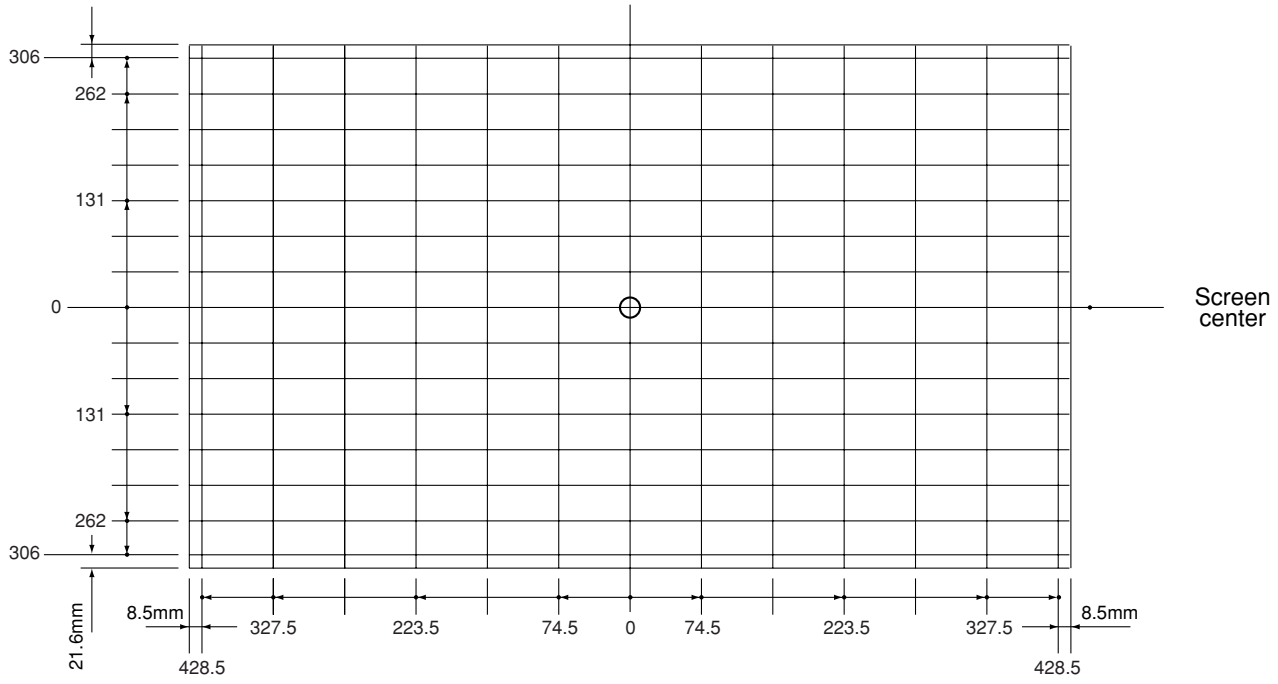
1. 100 Hz, 625P mode (PAL)



○ mark: center

43 inches 4:3 Screen size: Horizontal 874mm, Vertical 655mm
Dimension A: 74.5mm (H span), Dimension B: 36.5mm (V span)

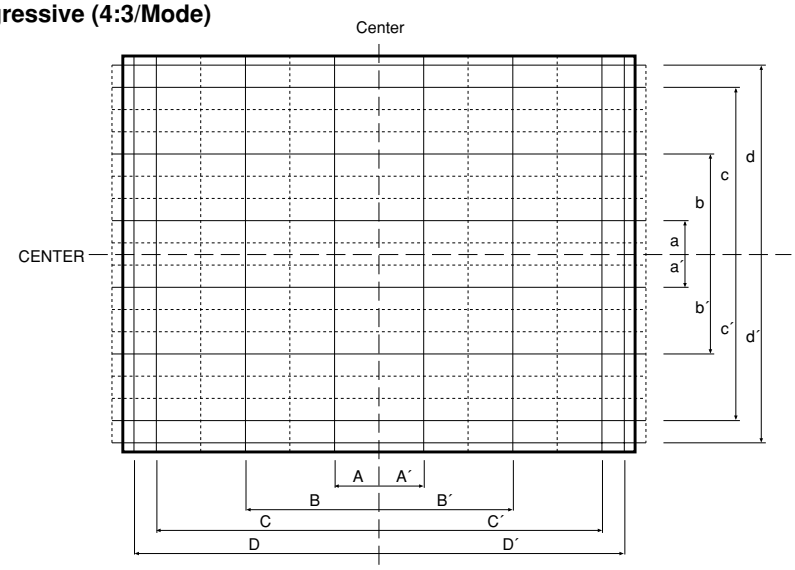
2. 525P mode (NTSC)



43 inches 4:3 Screen size: Horizontal 874mm, Vertical 655mm
Dimension A: 74.5mm, Dimension B: 43.7mm

5. Screen adjustment dimensions

5-1 PAL DFS, Progressive (4:3/Mode)



GEOMETRY

1) VERTICAL

MODEL	a, a'	b, b'	c, c'	d, d'	V SPAN
43CVR	55.0	164.5	274.0	310.5	36.5
50CVR	63.5	191.0	318.0	360.0	42.4

2) HORIZONTAL

MODEL	A, A'	B, B'	C, C'	D, D'	H SPAN
43CVR	74.5	223.5	372.5	428.5	74.5
50CVR	86.3	259.0	431.5	496.0	86.3

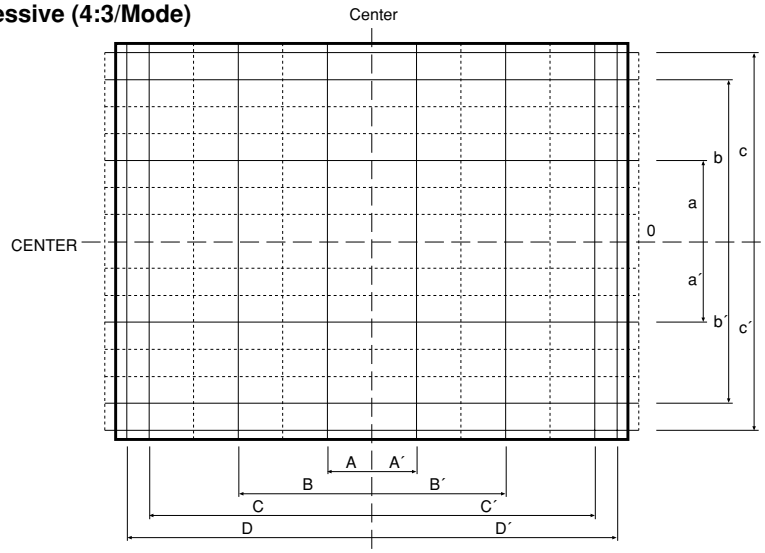
NOTE

ADJUSTMENT METHOD: PHILIPS PATTERN

The 3.5th left and right bar and screen bezel are in agreement.

The 3.5th upside and downside bar and screen bezel are in agreement.

5-2 NTSC Progressive (4:3/Mode)



GEOMETRY

1) VERTICAL

MODEL	a, a'	b, b'	c, c'	V SPAN
43CVR	131.0	262.0	306.0	43.7
50CVR	151.5	303.0	353.5	50.5

2) HORIZONTAL

MODEL	A, A'	B, B'	C, C'	D, D'	H SPAN
43CVR	74.5	223.5	372.5	428.5	74.5
50CVR	86.3	259.0	431.5	496.0	86.3

NOTE

ADJUSTMENT METHOD: RETOMA PATTERN

The 4.8th left and right bar and screen bezel are in agreement.

The 4.2th upside and downside bar and screen bezel are in agreement.

6. TELETEXT (P2) CIRCUIT

6-1 OUTLINE

TELETEXT circuit extracts several data of input video signal, and decode them to generate display signal. It works as Stand-alone Subsystem. Major feature of TELETEXT circuit is as follows.

- Digital Data Slicer of VBI (Vertical Blanking Interval) data
- Display 50/60/100/120Hz mode
- Display Progressive mode (Only SAA5695HL)
- Decode & Display Teletext (Level 1.5)
- Supporting character set of Pan-Euro/ Cyrillic/ Arabic/ Farci
- Supporting Asia language as shown in Table 6-1-1 and Table 6-1-2

Text Character	Text Language
No Selection West Europe	English/German/Dutch/Flemish/Hungarian/Swedish/Finnish/ Danish/Norwegian/Italian/French/Spanish/Portuguese/Turkish

Table 6-1-1 Supported Teletext Language for Austraria (A) and Singapore (E)

Text Character	Text Language
Character 1 Russian	Polish/German/Dutch/Flemish/Hungarian/Lituanian/Russian/ Bulgarian/Serbian/Croatian/Slovenian/Czech/Slovak/Estonian
Character 2 Ukrainian	Polish/German/Dutch/Flemish/Estonian/Lituanian/Lettish/French/ Ukrainian
Character 3 West Europe	English/German/Dutch/Flemish/Hungarian/Swedish/Finnish/ Danish/Norwegian/Italian/French/Spanish/Portuguese/Turkish
Character 4 Arabic	English/French/Turkish/Arabic
Character 5 Farsi	English/French/Turkish/Iranian/Persian

Table 6-1-2 Supported Teletext Language for Russian (R)/Middle East (M)

6-2 CIRCUIT OPERATION

The Teletext subsystem receives quite simple commands from mains system (QA01) via serial I^2C bus, and takes control over the Teletext Pages display.

Block diagram of Teletext circuit is shown in Fig.6-2-1. Video signal that is input to pin 7 of UNIT from H001 is changed to 1.0V(p-p) signal that is improved by the ATT & Negative Group Delay Compensation Filter, and it is supplied to pin 31 and 32 of QT01.

The display signal is output at pins 11, 14 and 15 in the Analogue 0.6V DC offset + 0.4 to 0.56V(p-p) defined in subdata TXTG (0.4V(p-p) at 50Hz Scanning, 0.56V(p-p) at 100Hz Scanning), and at pin 10 in the Digital 3.3V(p-p) of positive polarity. the display signal timing is synchronized by Horizontal and Vertical signal from pins 4 and 5 of UNIT. The timing and polarity of Horizontal and Vertical is defined in subdata TXTS.

The RGB output is sent to V/C/D IC and the screen is displayed.

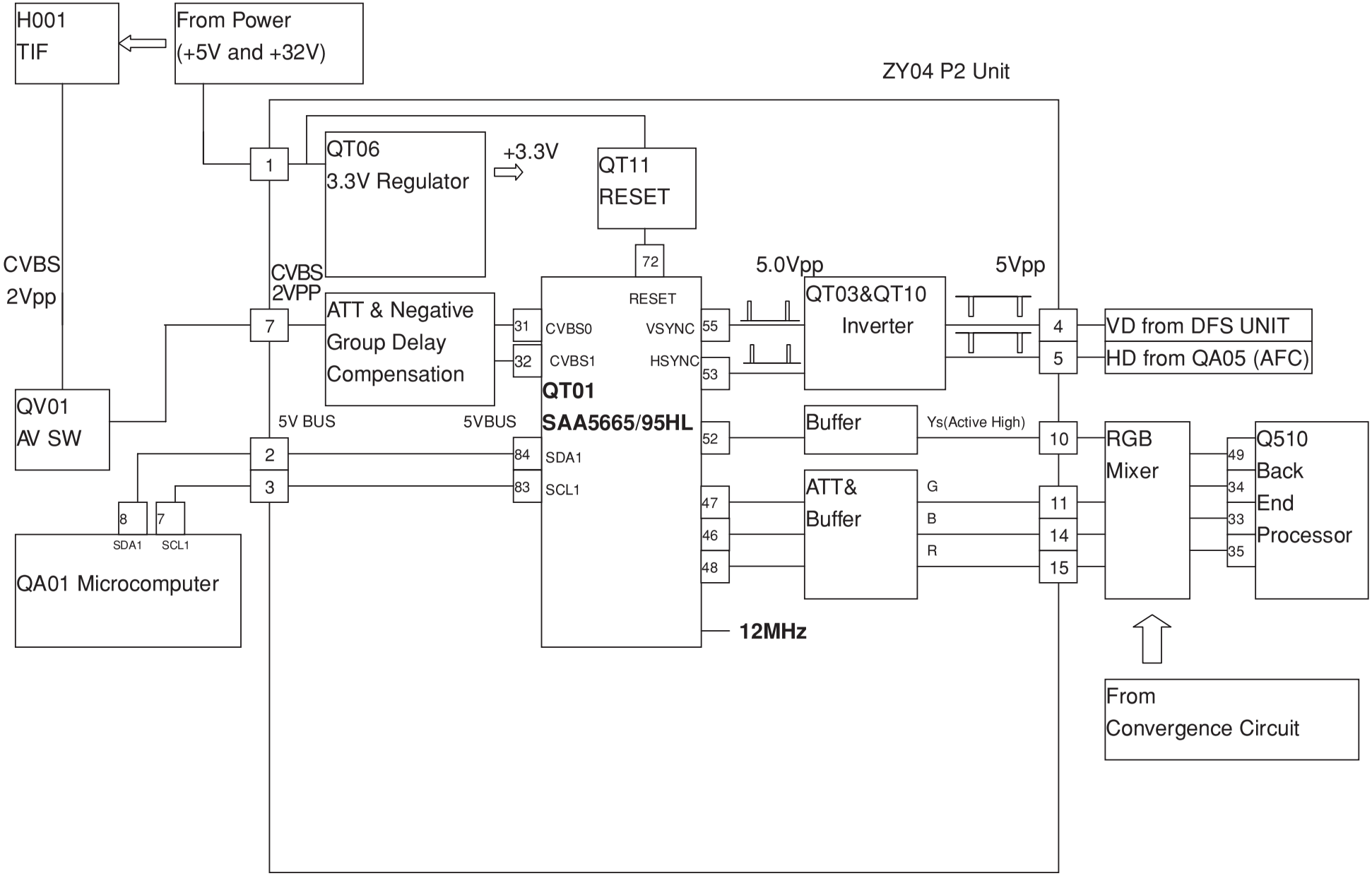


Fig. 6-2-1 Block Diagram

6-3 PART DESCRIPTION

QT01 SAA5665HL/SAA5695HL(P2)

QT01 works as Sub Micro Computer. It contains CPU(80C51), Data Capture and Display Hardware for Teletext. The block Diagram of SAA5665HL/SAA5695HL(Painter II, P2) is shown in Fig. 6-3-1.
SAA5695HL will support the progressive scan mode (under development).

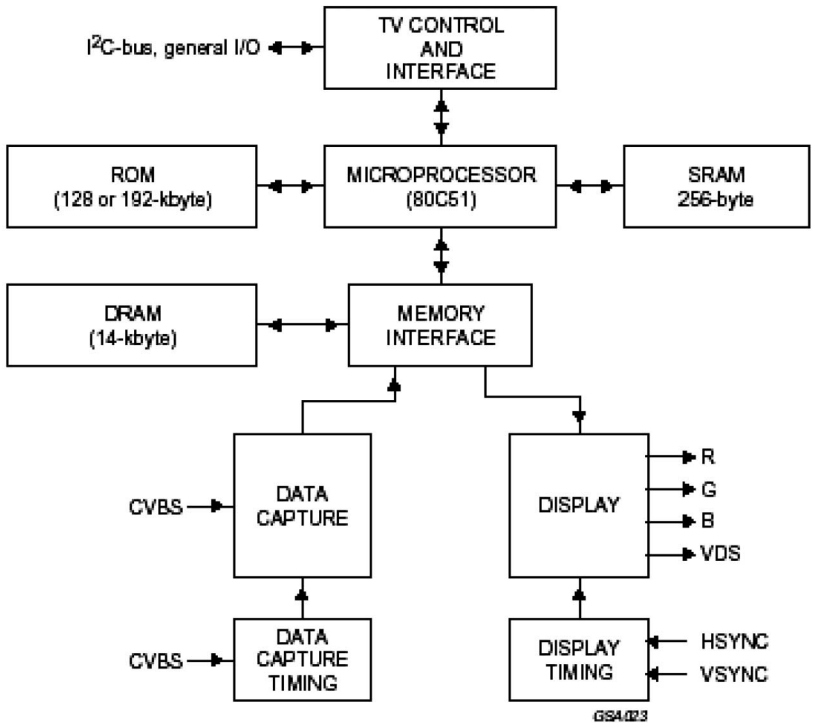


Fig. 6-3-1 SAA5665HL/SAA5695HL Block Diagram

Group Delay Compensation Filter

The Group Delay Compensation Filter Circuit is shown in Fig. 6-3-2, and improves the acquisition performance of the full data service slicer for CVBS signals with group delay, but it is dependent on Tuner, IF performance and region. Use or Not use this filter is set by the Sub data SYS (00h=Use this filter and CVBS0 is valid, 02h=Not use this filter and CVBS1 is valid). Not use this filter and CVBS1 is valid at factory default setting (SYS=02h). According to signal condition, it is changed to CVBS0 (SYS=00h) by the Sub data SYS. Sub data (SYS) is able to set for each channel position.

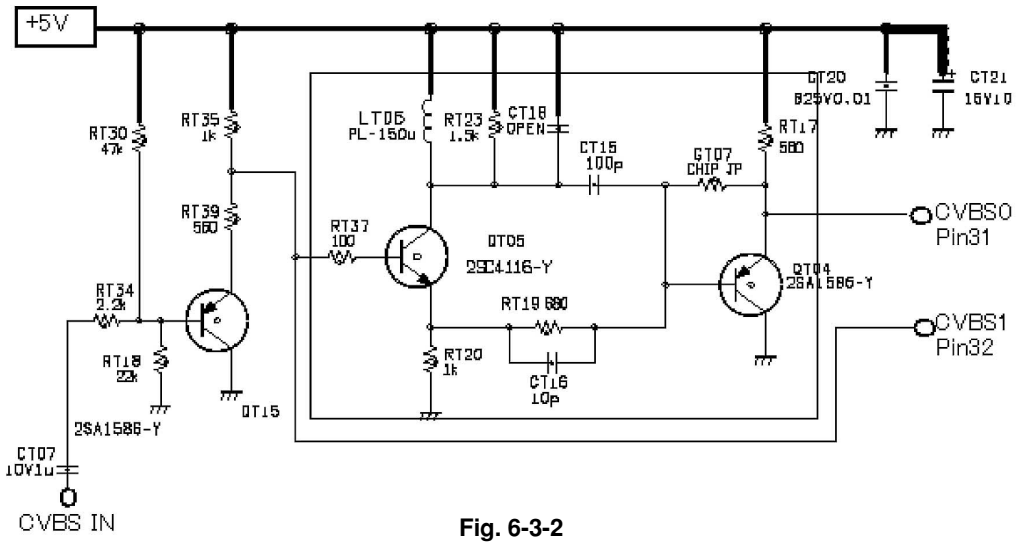


Fig. 6-3-2

6-4 CIRCUIT CHECKPOINT

The major checkpoint of circuit is shown in Table 6-4-1.

Problem	Check Point
No Teletext	To check BUS CONT Error, using Self Check Menu of service mode. To check +5V To check 12MHz Clock

Table 6-4-1

7. SUBDATA DESCRIPTION

Sub data (Design data) of Teletext circuit is as follow. Their sub data is displayed only at Design mode.

7-1 TEXT Screen Position

To adjust TEXT screen by using following subdata

- TXTH = Horizontal Position Offset for Teletext screen (1/4 Character/Step)
- TXTV = Vertical Position Offset for Teletext screen (1 line/Step)

7-2 H/V Synchronization

Teletext screen jitter occurs at the point where the Horizontal pulse to Vertical pulse timing = 1/2H. So it is recommended to set the active edge of the Horizontal and Vertical synchronization signals to the leading edge of the pulse. A typical Horizontal sync pulse will be 1/4H in duration and a typical Vertical sync pulse 500-900 _s in duration.

To adjust Horizontal and Vertical timing by using following subdata.

- TXTS(Bit3-0) = Vertical Sync Delay (0.66 _sec/step) = 0 to 41.58 _sec

To adjust the polarity of Horizontal and Vertical by using following subdata

- TXTS(Bit7) = 0: Negative Horizontal pulse at Pin 5 of UNIT
  = 1: Positive Horizontal pulse at Pin 5 of UNIT
- TXTS(Bit6) = 0: Negative Vertical pulse at Pin 4 of UNIT
  = 1: Positive Vertical pulse at Pin 4 of UNIT

7-3 TEXT Screen Brightness

To adjust RGB Output level of QT01 (Pin 46, 47 and 48) by using following subdata

- TXTG(Bit3-0) = RGB Output Level = 0.7V(00h) to 1.0V(0Fh)

7-4 TEXT CVBS Selection

To select CVBS through or pass the Group Delay Compensation Filter by using following subdata

It is possible to select it at each channel position (0-99 Pos), according to signal condition of each position. This solution will be very useful for Asia market.

- SYS(Bit1) = 0: CVBS0 / Pin31 of QT01 (Using the filter)
  = 1: CVBS1 / Pin32 of QT01 (Pass the filter)(Factory default setting)

8. TECHNICAL DESCRIPTION

8-1 TELETEXT

Teletext is defined in ETS 300 706 by ETSI (European Telecommunication Standard Institute).

8-1-1 TELETEXT LEVEL

Teletext data is organised to provide a range of presentation and application features. Their features have been arranged to be downward compatible to permit initial services to be defined and existing services to be upgraded without rending present decoders in the filed obsolete.

Presently three levels are defined:

LEVEL 1

- Alpha mosaic characters
- Spacing attributes
- Fixed colour palette
- 25 rows of 40 columns

LEVEL 1.5

Level 1.5 Display Image is shown in Fig. 8-1-1.

- Extends the character set repertoire of Level 1 with the use of X26.

Fig. 8-1-1 Level 1/1.5 Screen Image

8-1-2 NAVIGATION MODES

To provide faster access by the user to certain pages within the Teletext service a method was included in the Teletext specification for the broadcaster to link pages, so they could be accessed using a single key press. Due to the constraints of how some equipment operated in the field one methods of linking or navigation of these pages were developed and are known as FLOF .

FLOF (Full Level One Future)/FASTEXT

When user switches to Teletext at first, A given page will be selected. This page will most probably be the main index page but it can be arranged that an advertising page comes up first. This will depend on how the broadcasting organization wishes to use the new feature (X8/30).

At the bottom of this first page are four key words, or prompts, each word in a different colour. The colour of these prompts will be matched by four colour buttoms on the remote control. For example:

WORLD NEWS	TV GUIDE	WORLD SPORT	FINANCE
(Red)	(Green)	(Yellow)	(Cyan)

On pressing the green button (TV GUIDE) on the remote control unit, the next page will be the top TV guide page. This page will have a row 24 set of prompts which when selected with the appropriate button will take the user quickly through the pages associated with the initial choice of subjects. The next set of prompts could be:

BBC1	BBC2	CH4	CH5
(Red)	(Green)	(Yellow)	(Cyan)

Thus the use with a single key press can explore the sublect of interest. if the user chooses to go back, this is achieved by pressing the index key.

Fig. 8-1-2 FLOF Screen Image

8-1-3 DATA TRANSMISSION FORMAT

Teletext data is transmitted on VBI TV line. Subject to availability, Lines 6 to 22 and 318 to 335 may be used to carry Teletext data packets as shown in Fig. 8-1-3.

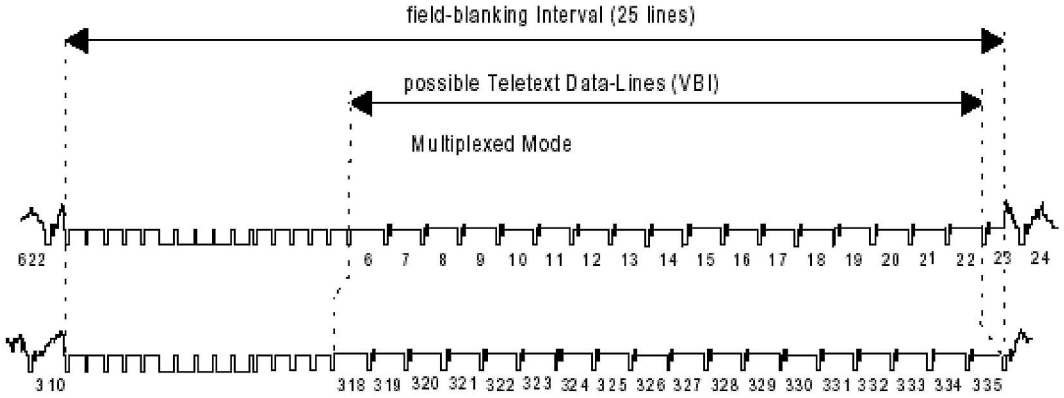
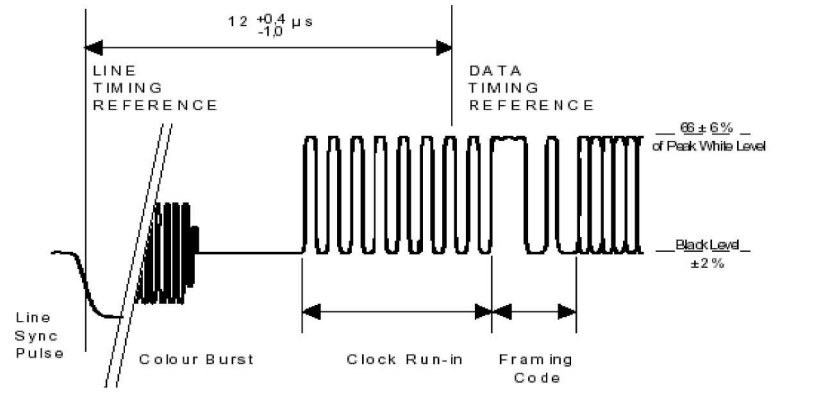


Fig. 8-1-3

A Teletext data packet occupies one TV line. Each packet starts with a clock run-in and framing code sequence for establishing bit and byte synchronization within the decoder. The framing code has a fixed timing relationship to the line synchronization pulses of the video signal.

Signalling method:	Binary non-return-to-zero (NRZ);
Bit Rate:	444 x nominal fHC(6.9375 Mbit/s ± 25 ppm)
Spectrun of data pulse:	Skew symmetrical about 0.5 x bit rate, substantially zero by 5MHz
Video baseband signal level of element 1:	66 ± 6 % of the difference between Black Level and Peak White Level
Video baseband signal level of element 0:	Black Level ± 2 %0 V
Capacity of the whole data line:	360 bits organized as 45 bytes. In each byte, the bits are numbered 1 to 8 (LSB to MSB), and are normally transmitted LSB first.



NOTE: Nominally, the data is inserted with the point of reference at 12,0 µs after the half-amplitude point of the leading edge of the line synchronizing pulse. However, it may be necessary to depart from this to allow for the re-timing of the synchronizing pulses on some networks, particularly as a result of sync reprocessing in some transmitters, so as to ensure that the timing of the data as transmitted is always within the allowable tolerance range.

Fig. 8-1-4

SCREEN AND MIRROR ALIGNMENTS

ASSEMBLING AND MOUNTING OF FRONT SCREEN

* Please refer to MECHANICAL DISASSEMBLY page 38.

CLEANING OF LENS AND MIRROR

CAUTION : Do not hold the optical system parts (lens and mirror) with bare hand to avoid finger-prints on the surface of those parts.

HOW TO CLEAN LENS AND MIRROR

1. Be sure to remove sand dust with an air brush, etc.
2. When it is stained slightly, breathe upon it and wipe away with the specified cleaning cloth.
   For other stains than the above, wipe the stains away with the specified cloth into which a cleaning liquid has been soaked.

Cleaning liquid ..... **LENS LUSTER** (Manufactured by Edmund Scientific Co.), etc.

HOW TO CLEAN SCREEN

When cleaning the screen, use a soft cloth so as not to damage the screen.

1. Wipe the stain away with a diluted neutral detergent soaked cloth.
2. Wipe the detergent away with a water soaked cloth.
3. Wipe the screen with a dry cloth to remove moisture on the screen.

Note : Absolutely do not use alcohol, benzine, thinner, etc. for cleaning in order not to wipe away the black print on the surface.

CIRCUIT CHECKS

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST to minimum (zero beam current).
3. High voltage must be measured below (B) kV.

   Refer to table-1 for high voltage (B).
   (See SETTING & ADJUSTING DATA on page 33)
4. Vary the BRIGHTNESS to both extremes to be sure the high voltage does not exceed the limit under any conditions.

CAUTION:

When the following parts fail, check the High Voltage after replacing.

Location No.	Name	Name
T461	Flyback Trans.	TFB3092AS/TFB3092AD
C440	Capacitor	1200pF, ±3%
C443	Capacitor	10000pF, ±3%
C444	Capacitor	4700pF, ±3%
C4431	Capacitor	22000pF, ±3%
C4432	Capacitor	18000pF, ±3%
C4433	Capacitor	9100pF, ±3%
C467	Capacitor	8200pF, ±3%
C468	Capacitor	15000pF, ±3%
C4681	Capacitor	12000pF, ±3%
C4682	Capacitor	15000pF, ±3%
C4683	Capacitor	12000pF, ±3%
C4684	Capacitor	22000pF, ±3%

ANODE VOLTAGE MEASURING METHOD

CAUTION: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, DEFLECTION assembly, and POWER SUPPLY assembly).

1. Disconnect the FBT anode cable as outlined below. Measure high voltage at the point where the cable enters the FBT.
2. Holding the rubber cover firmly, turn it counterclockwise and check that the lock has been disengaged. (See Fig. b on page 8.)
3. Determine the extent of the rubber cover before disconnecting the cable.
4. Pull straight up the anode cable to disconnect.
5. When reconnecting the cable, proceed in the reverse order.
   After reconnecting, tug on the cable to check that it is secure.

CHAPTER 2 SPECIFIC INFORMATIONS

SETTING & ADJUSTING DATA

【 SAFETY INSTRUCTIONS 】

		43"	50"
HIGH VOLTAGE AT ZERO BEAM:	(A)	31.8 kV	31.8 kV
MAX HIGH VOLTAGE:	(B)	32.5 kV	32.5 kV
AC VOLTAGE	(C)	220~240 V	220~240 V

Table-1

【 SERVICE MODE 】

ADJUSTING ITEMS AND DATAS IN THE SERVICE MODE:

Item	Adjustment	Reference data
RCUT	R CUTOFF	40H
GCUT	G CUTOFF	40H
BCUT	B CUTOFF	40H
RDRV	R DRIVE	40H
BDRV	B DRIVE	40H
CNTX	SUB CONTRAST MAX	7FH
BRTC	SUB BRIGHT CEN	80H
COLC	SUB COLOR CEN NTSC	19H
TNTC	SUB TINT CEN	1EH
COLP	SUB COLOR CEN PAL	01H
COLS	SUB COLOR CEN SECAM	1AH
COLD	SUB COLOR CEN DVD	50H
SCNT	SUB CONTRAST	1DH
SRY	SECAM R-Y	07H

Item	Adjustment	Reference data
SBY	SECAM B-Y	04H
HPOS	H-POSITION	3CH
VPOS	V-POSITION	84H
HIT	HEIGHT	4DH
VLIN	V-LINEARITY	10H
VSC	V-S CORRECTION	0EH
VPS	V-SHIFT	1CH
VCP	V-COMPENSATION	0DH
WID	PICTURE WIDTH	1CH
PARA	E-W PARABOLA	25H
CNR	E-W CORNER	08H
TRAP	TRAPEZIUM	18H
HCP	H-COMPENSATION	02H
VFC	V-F CORRECTION	04H

Table-2

【 DESIGN MODE 】

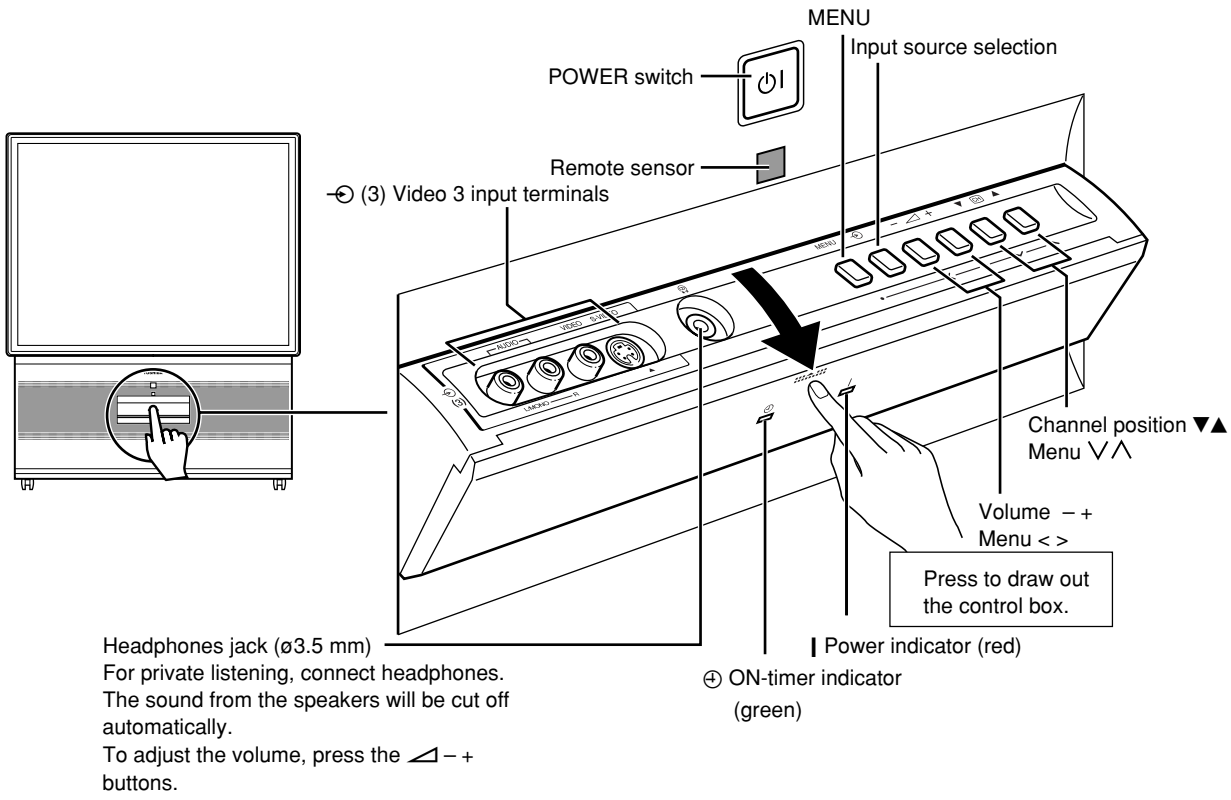
ADJUSTING ITEMS AND DATAS IN THE DESIGN MODE:

Item	Name of adjustment	43"	50"	Remarks
OPT0	OPTION 0	84H	←	
OPT1	OPTION 1	4AH	←	
OPT2	OPTION 2	16H	←	
OPT3	OPTION 3	46H	←	
OPT4	OPTION 4	20H	←	
OPT5	OPTION 5	A1H	←	

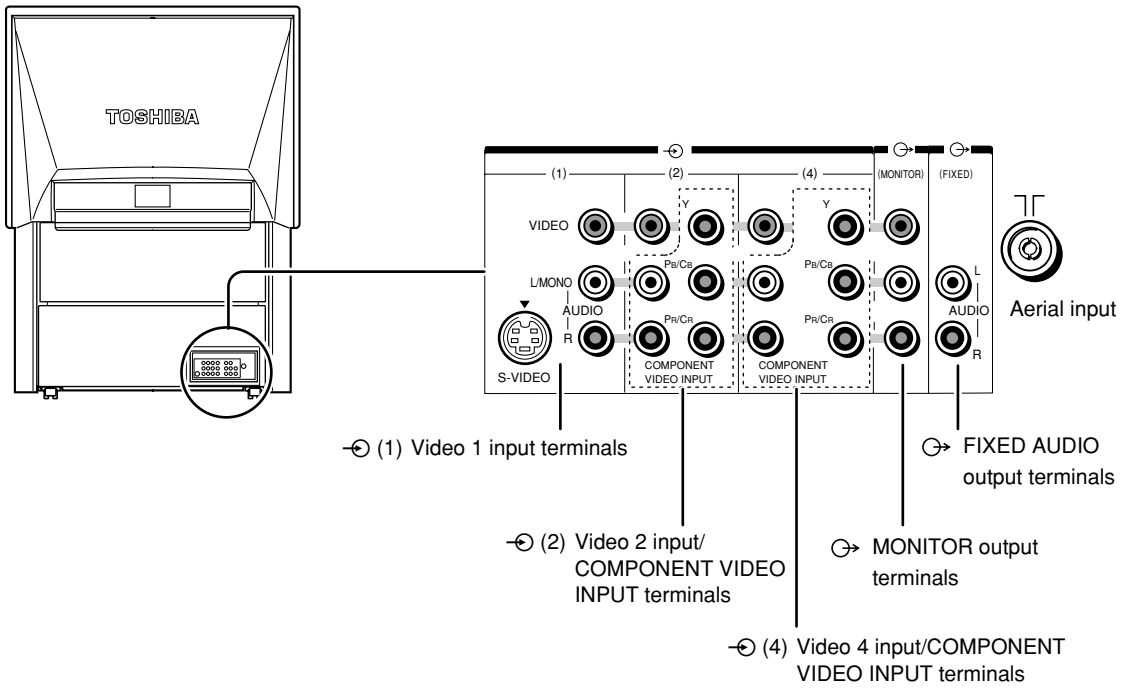
Table-3

LOCATION OF CONTROLS (Representative: 43CVR9UR)

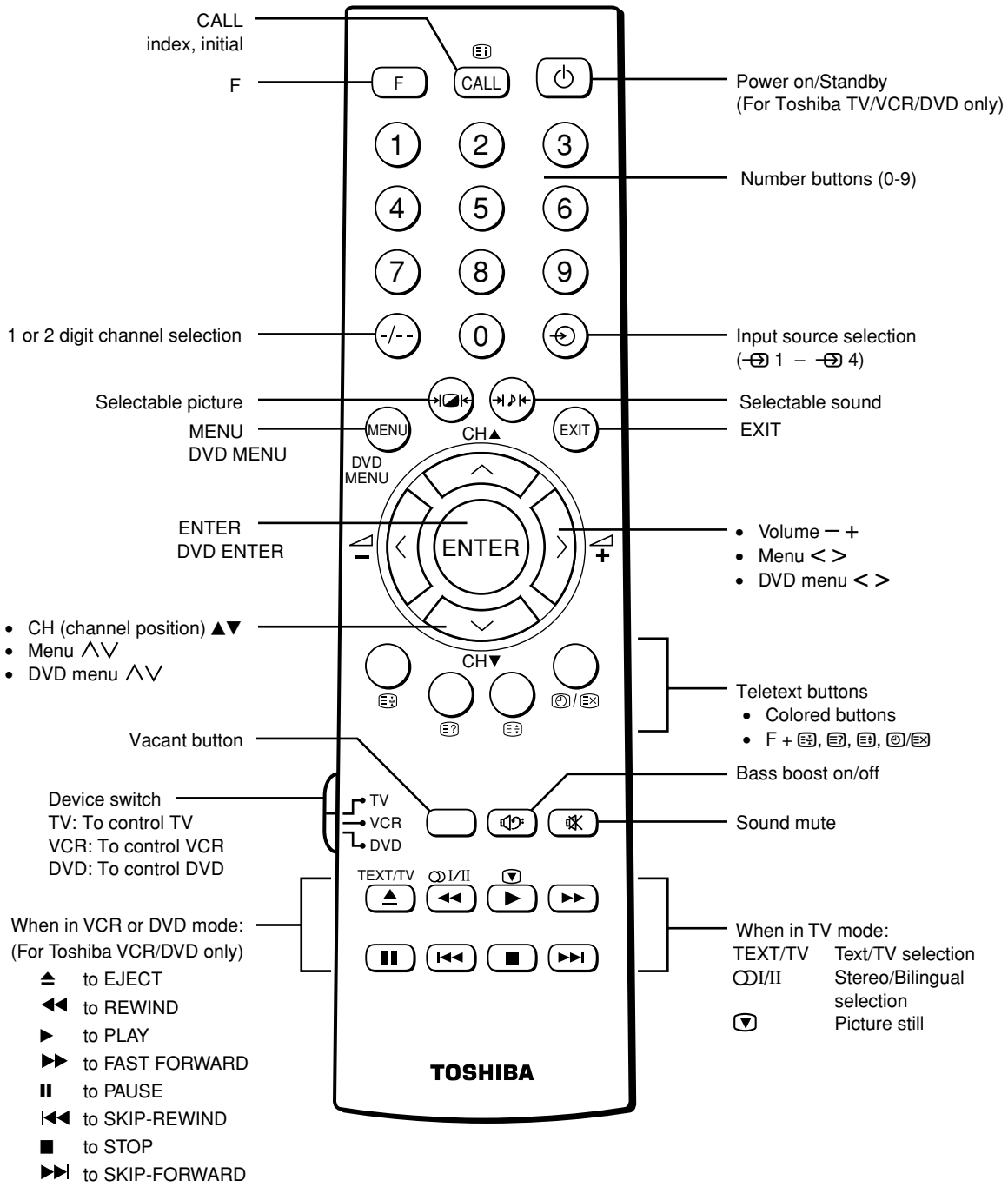
Front



Back



Remote Controller



PROGRAMMING CHANNEL MEMORY

- First, use the ASM (Automatic Search Memory) function to preset all the active channels in your area automatically. Then, arrange the preset channels with the SEARCH, SKIP functions, MFT (Manual Fine Tuning) so that you can tune into only desired channels.
- Use the SEARCH function if desired channels cannot be preset with the ASM or if you would like to preset channels to specific position numbers one by one.
- After presetting the channels, you may skip unnecessary position numbers so that only the channels you want to watch are selected.

To preset channels (ASM, SEARCH)

ASM (Automatic Search Memory)

1 Select the first position number you want to start the ASM with the **CH ▲▼** buttons or **Number** buttons.

2 Press the **MENU** button, then press the < or > button to display the SET UP menu.

3 Confirm that "COLOR" is set to "AUTO" and "SOUND" is set to proper system.
If not, press the ∨ button, then press the < or > button to select proper system.

4 Press the ∨ button to select ASM.

5 Press the > (+) button to start the ASM. All active channels will be preset automatically.
When presetting is complete, the initial position number will reappear.

After presetting
Check the preset channels by pressing the **CH ▲** or **▼** button.

- If the color of a certain channel is abnormal, the automatic color system selection (AUTO) may have malfunctioned, or sound system selection is wrong. In such a case, select another color and/or sound system.

SEARCH

1 Press the **MENU** button, then press the < or > button to display the SET UP menu.

2 Press the ∨ (or ∧) button to select SEARCH.

3 Press the < or > button to start searching. The < button searches for lower-numbered channels; the > button for higher-numbered channels.
Repeat this process until you can get the desired channel.

4 When the desired channel is shown, press the ∨ button to select POSITION.

5 Press the < or > button repeatedly until the position number to be preset.

6 Press the ∨ button to select MEMORY, then press the > (+) button to store the channel at the current position.

7 When you program other channels, repeat steps 2 to 6.

To preset channels (SKIP)

To skip unnecessary position number

1 Select the position number to be skipped with the **CH ▲▼** buttons or **Number** buttons.

2 Press the **MENU** button, then press the < or > button to display the SET UP menu.

3 Press the ∨ (or ∧) button to select SKIP.

4 Press the < or > button to select ON.

5 Press the **EXIT** button to erase the menu display, then select the position number to be skipped with the Number buttons. "∗" mark appears to the left of the position number.
The position number will then be skipped when you select channels with the **CH ▲▼** buttons.

To restore a skipped position number

1 Select the position number you want to restore with the **Number** buttons.

2 Select OFF in step 4 above.

To preset channels (MFT, AFT)

MFT (Manual Fine Tuning)

The adjustments below are not necessary under normal receiving conditions. However, in areas of inferior broadcast conditions where adjustment is necessary for a better picture, perform the MFT.

1 Select the channel you want to fine-tune with the **CH** ▲▼ buttons or **Number** buttons.

2 Press the **MENU** button, then press the < or > button to display the SET UP menu.

3 Press the ∨ (or ∧) button to select MFT (on 2nd page).

4 Press the < or > button until the best possible picture and sound are obtained.

Note
When operating the MFT function, the AFT status is automatically set to OFF.

AFT (Automatic Fine Tuning)

The AFT function automatically corrects slight fluctuations when receiving signals.

1 Select the channel you want to fine-tune with the **CH** ▲▼ buttons or **Number** buttons.

While in the AFT OFF mode, "■" mark appears to the left of the position number.

2 Press the **MENU** button, then press the < or > button to display the SET UP menu.

3 Press the ∨ (or ∧) button to select AFT (on 2nd page), then press the < or > button to select ON.

To use the Aerial attenuator

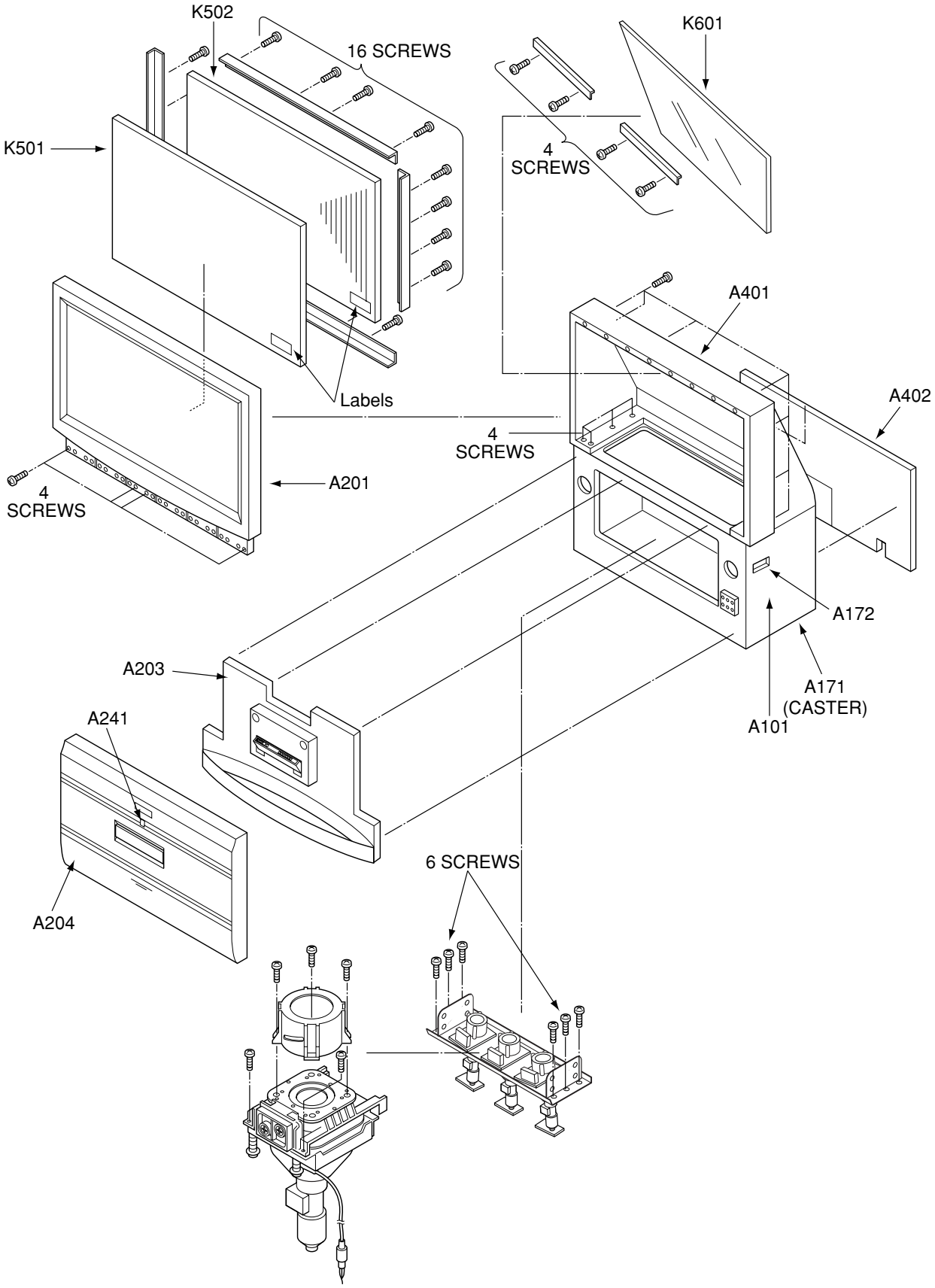
When visual interference occurs, set the Aerial attenuator (ANT ATT) to ON.

1 Press the **MENU** button, then press the < or > button to display the SET UP menu.

2 Press the ∨ (or ∧) to select ANT ATT (on 2nd page), then press the < or > button to select ON.

Note
This setting is effective for the program position you are now watching.

MECHANICAL DISASSEMBLY



CHASSIS AND CABINET REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE “X-RAY RADIATION PRECAUTION”, “SAFETY PRECAUTION” AND “PRODUCT SAFETY NOTICE” ON PAGE 3 OF THIS MANUAL.

CAUTION: The international hazard symbols “⚠” in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE. Do not degrade the safety of the receiver through improper servicing.

NOTICE:

- *The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.*
- *The PC board assembly with ⁎ mark is no longer available after the end of the production.*

Models :43CVR9UR, 50CVR9UR

Capacitors	CD	:	Ceramic Disk	PF	:	Plastic Film	EL	: Electrolytic
Resistors	CF	:	Carbon Film	CC	:	Carbon Composition	MF	: Metal Film
	OMF	:	Oxide Metal Film	VR	:	Variable Resistor	FR	: Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Parts No.	Description
CAPACITORS		
C101	24796479	ELECTROLYTIC, 35V 4.7UF M
C102	24793221	ELECTROLYTIC, 10V 220UF M
C105	24109102	CERAMIC CHIP, 50V B 1000PF K
C106	24797100	ELECTROLYTIC, 50V 10UF M
C107	24794221	ELECTROIYTIC, 16V 220UF M
C109	24109103	CERAMIC CHIP, 50V B 0.01UF K
C115	24109103	CERAMIC CHIP, 50V B 0.01UF K
C190	24109103	CERAMIC CHIP, 50V B 0.01UF K
C201	24793471	ELECTROLYTIC, 10V 470UF M
C205	24797229	ELECTROLYTIC, 50V 2.2UF M
C206	24794220	ELECTROLYTIC, 16V 22UF M
C219	24105100	CERAMIC CHIP, 50V CH 10PF D
C220	24105100	CERAMIC CHIP, 50V CH 10PF D
C221	24105100	CERAMIC CHIP, 50V CH 10PF D
C222	24105100	CERAMIC CHIP, 50V CH 10PF D
C230	24794101	ELECTROLYTIC, 16V 100UF M
C231	24203100	ELECTORLYTIC, 16V 10UF M7L 3A
C296	24794470	ELECTROLYTIC, 16V 47UF M
C297	24503041	PLASTIC FILM , 63V 0.1UF J
C298	24503041	PLASTIC FILM , 63V 0.1UF J
C299	24503041	PLASTIC FILM , 63V 0.1UF J
C301	24503041	PLASTIC FILM , 63V 0.1UF J
C302	24503045	PLASTIC FILM, 63V 0.22UF J
C303	24567105	PLASTIC FILM, 50V 1 UF J
C304	24092730	CERAMIC CHIP, 16V B 0.1UF K
C305	24092730	CERAMIC CHIP, 16V B 0.1UF K
C306	24105102	CERAMIC CHIP, 25V CH 1000PF J
C307	24567105	PLASTIC FILM, 50V 1 UF J
C308	24092733	CERAMIC CHIP, 50V B 0.022UF K
C309	24105102	CERAMIC CHIP, 25V CH 1000PF J
C310	24073090	ELECTROLYTIC, 50V 100UF M3A
C311	24109103	CERAMIC CHIP, 50V B 0.01UF K
C312	24105102	CERAMIC CHIP, 25V CH 1000PF J
C313	24073038	ELECTROLYTIC, 16V 100UF M3A
C314	24092730	CERAMIC CHIP, 16V B 0.1UF K
C315	24073042	ELECTROLYTIC, 16V 1000UF M3A
C316	24073042	ELECTROLYTIC, 16V 1000UF M3A
C317	24109222	CERAMIC CHIP, 50V B 2200PF K
C318	24109222	CERAMIC CHIP, 50V B 2200PF K
C319	24503049	PLASTIC FILM, 63V 0.47UF J
C320	24073090	ELECTROLYTIC, 50V 100UF M3A

Location No.	Parts No.	Description
C321	24073090	ELECTROLYTIC, 50V 100UF M3A
C322	24109473	CERAMIC CHIP, 25V B 0.047UF K
C323	24109473	CERAMIC CHIP, 25V B 0.047UF K
C324	24073090	ELECTROLYTIC, 50V 100UF M3A
C325	24503045	PLASTIC FILM, 63V 0.22UF J
C326	24092730	CERAMIC CHIP, 16V B 0.1UF K
C327	24092753	CERAMIC CHIP, 10V B 0.22UF K
C328	24082260	PLASTIC FILM, 100V 4700PF J
C329	24073086	ELECTROLYTIC, 50V 10UF M3A
C330	24085946	ELECTROLYTIC, NONPOLAR, 16V 10UF M3A
C332	24073091	ELECTROLYTIC, 50V 220UF M3A
C333	24693473	PLASTIC FILM, 100V 0.047UF J
C334	24109471	CERAMIC CHIP, 50V B 470PF K
C335	24092730	CERAMIC CHIP, 16V B 0.1UF K
C338	24073036	ELECTROLYTIC, 16V 33UF M3A
C339	24073053	ELECTROLYTIC, 25V 100UF M3A
C340	24073036	ELECTROLYTIC, 16V 33UF M3A
C350	24073057	ELECTROLYTIC, 25V 1000UF M3A
C351	24503041	PLASTIC FILM , 63V 0.1UF J
C352	24503041	PLASTIC FILM , 63V 0.1UF J
C353	24073040	ELECTROLYTIC, 16V 330UF M3
C362	24109153	CERAMIC CHIP, 50V B 0.015UF K
C370	24073082	ELECTROLYTIC, 50V 2.2UF M3A
C371	24092730	CERAMIC CHIP, 16V B 0.1UF K
C401	24214332	CERAMIC DISC, 500V B 3300PF K
C402	24214391	CERAMIC DISC, 500V B 390PF K
C403	24073050	ELECTROLYTIC, 25V 22UF M3A
C405	24503042	PLASTIC FILM, 63V 0.12UF J
⚠ C412	24503192	PLASTIC FILM, 400V 0.15UF J
C415	24092478	CERAMIC DISC, 2KV B 470PF K
C416	24676220	ELECTROLYTIC, 100V 22UF M3A
C417	24503141	PLASTIC FILM, 250V 1.5UF K
⚠ C423	24503143	PLASTIC FILM, 400V 0.33UF J
⚠ C425	24503142	PLASTIC FILM, 400V 0.27UF J
C426	24211222	CERAMIC DISC, 2KV B 2200PFK
C432	24567333	PLASTIC FILM, 50V 33000PF J
C440	24503061	PLASTIC FILM, 1800VH 1200PF H
⚠ C443	24503202	PLASTIC FILM, 1800VH 0.01UF H
⚠ C444	24503099	PLASTIC FILM, 1800VH 4700PF H
C445	24828473	PLASTIC FILM, 200V 0.047UF J
C446	24073120	ELECTRPLYTIC, 250V 33UF, 250YXF33M
C448	24073118	ELECTROLYTIC, 160V 33UF M

Location No.	Parts No.	Description
C449	24214221	CERAMIC DISC, 500V B 220PF K
C460	24679330	ELECTROLYTIC, 250V 33UF M3A
C463	24567223	PLASTIC FILM, 50V 0.022UF J
⚠ C464	24503343	PLASTIC FILM, 100V 3.3UF K
C465	24590103	PLASTIC FILM, 50V 0.01UF J
C466	24567123	PLASTIC FILM, 50V 0.012UF J
C467	24820822	PLASTIC FILM, 630V 8200PF J
C468	24820153	PLASTIC FILM, 630V 0.015UF J
⚠ C470	24503343	PLASTIC FILM, 100V 3.3UF K
C481	24073038	ELECTROLYTIC, 16V 100UF M3A
C482	24567223	PLASTIC FILM, 50V 0.022UF J
C483	24567153	PLASTIC FILM, 50V 0.015UF J
C484	24590102	PLASTIC FILM, 50V 1000PF J
C496	24503049	PLASTIC FILM, 63V 0.47UF J
C497	24073086	ELECTROLYTIC, 50V 10UF M3A
C498	24073082	ELECTROLYTIC, 50V 2.2UF M3A
C499	24073035	ELECTROLYTIC, 16V 22UF M3A
C510	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C513	24109103	CERAMIC CHIP, 50V B 0.01UF K
C514	24794101	ELECTROLYTIC, 16V 100UF M
C516	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C517	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C518	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C520	24591334	PLASTIC FILM, 50V 0.33MF J
C530	24797010	ELECTROLYTIC, 50V 1UF M
C531	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C532	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C533	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C534	24797478	ELECTROLYTIC, 50V 0.47UF M
C535	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C536	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C537	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C538	24797010	ELECTROLYTIC, 50V 1UF M
C539	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C540	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C541	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C542	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C547	24109103	CERAMIC CHIP, 50V B 0.01UF K
C548	24073038	ELECTROLYTIC, 16V 100UF M3A
C563	24797478	ELECTROLYTIC, 50V 0.47UF M
C564	24797479	ELECTROLYTIC, 50V 4.7UF M
C582	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C583	24794470	ELECTROLYTIC, 16V 47UF M
C584	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C586	24206100	ELECTROLYTIC, 50V 10UF M7L 3A
C587	24109222	CERAMIC CHIP, 50V B 2200PF K
C588	24105561	CERAMIC CHIP, 50V CH 560PF J
C589	24109332	CERAMIC CHIP, 50V B 3300PF K
C601	24669229	ELECTROLYTIC, 50V 2.2UF M3A
C602	24797229	ELECTROLYTIC, 50V 2.2UF M
C603	24436271	CERAMIC DISC, 50V SL 270PF J
C604	24436271	CERAMIC DISC, 50V SL 270PF J
C605	24073086	ELECTROLYTIC, 50V 10UF M3A
C606	24073086	ELECTROLYTIC, 50V 10UF M3A
C607	24073052	ELECTROLYTIC, 25V 47UF M3A
C608	24073052	ELECTROLYTIC, 25V 47UF M3A
C609	24073068	ELECTROLYTIC, 35V 100UF M3A
C610	24073086	ELECTROLYTIC, 50V 10UF M3A
C612	24073094	ELECTROLYTIC, 50V 1000UF M3A
C613	24503042	PLASTIC FILM, 63V 0.12UF J
C614	24503042	PLASTIC FILM, 63V 0.12UF J
C615	24073095	ELECTROLYTIC, 50V 2200UF M3A
C616	24073095	ELECTROLYTIC, 50V 2200UF M3A
C617	24073087	ELECTROLYTIC, 50V 22UF M3A
C618	24797478	ELECTROLYTIC, 50V 0.47UF M
C619	24795471	ELECTROLYTIC, 25V 470UF M
C621	24797100	ELECTROLYTIC, 50V 10UF M

Location No.	Parts No.	Description
C622	24591152	PLASTIC FILM, 50V 1500PF J
C623	24591103	PLASTIC FILM, 50V 0.01UF J
C624	24797478	ELECTROLYTIC, 50V 0.47UF M
C631	24797220	ELECTROLYTIC, 50V 22UF M
C633	24797470	ELECTROLYTIC, 50V 47UF M
C634	24765101	ELECTROLYITC, 35V 100UF M
C635	24591273	PLASTIC FILM, 50V 0.027UF J
C636	24591273	PLASTIC FILM, 50V 0.027UF J
C651	24797479	ELECTROLYTIC, 50V 4.7UF M
C652	24797479	ELECTROLYTIC, 50V 4.7UF M
C653	24105101	CERAMIC CHIP, 50V CH 100PF J
C654	24105101	CERAMIC CHIP, 50V CH 100PF J
C655	24797479	ELECTROLYTIC, 50V 4.7UF M
C656	24797479	ELECTROLYTIC, 50V 4.7UF M
C657	24797479	ELECTROLYTIC, 50V 4.7UF M
C658	24797479	ELECTROLYTIC, 50V 4.7UF M
C659	24794101	ELECTROLYTIC, 16V 100UF M
C660	24794101	ELECTROLYTIC, 16V 100UF M
C661	24794101	ELECTROLYTIC, 16V 100UF M
C662	24797220	ELECTROLYTIC, 50V 22UF M
C663	24794471	ELECTROLYTIC, 16V 470UF M
C792	24073035	ELECTROLYTIC, 16V 22UF M3A
⚠ C801	24503002	PLASTIC FILM, AC275V 0.22UF M
⚠ C803	24503004	PLASTIC FILM, AC275V 0.47UF M
⚠ C805	24092565	CERAMIC DISC, AC250V B 470PF K
⚠ C806	24092565	CERAMIC DISC, AC250V B 470PF K
C811	24503053	PLASTIC FILM, 63V 1UF J
C812	24214103	CERAMIC DISC, 500V B 0.01UF K
C813	24667101	ELECTROLYTIC, 25V 100UF M3A
C814	24678229	ELECTROLYTIC, 200V 2.2UF M3A
C815	24503049	PLASTIC FILM, 63V 0.47UF J
C816	24073090	ELECTROLYTIC, 50V 100UF M3A
C817	24503045	PLASTIC FILM, 63V 0.22UF J
C819	24214102	CERAMIC DISC, 500V B 1000PF K
C820	24503045	PLASTIC FILM, 63V 0.22UF J
C821	24092480	CERAMIC DISC, 2KV B 680PF K
C822	24092481	CERAMIC DISC, 2KV B 820PF K
C823	24092476	CERAMIC DISC, 2KV B 330PF K
C824	24591472	PLASTIC FILM, 50V 4700PF J
⚠ C825	24503355	PLASTIC FILM, 800V 0.1UF J
C826	24092474	CERAMIC DISC, 2KV B 220PF K
C828	24503047	PLASTIC FILM, 63V 0.33UF J
C829	24073041	ELECTROLYTIC, 16V 470UF M3A
C830	24073052	ELECTROLYTIC, 25V 47UF M3A
C831	24503047	PLASTIC FILM, 63V 0.33UF J
C832	24073038	ELECTROLYTIC, 16V 100UF M3A
C833	24073037	ELECTROLYTIC, 16V 47UF M3A
C834	24503047	PLASTIC FILM, 63V 0.33UF J
C835	24073038	ELECTROLYTIC, 16V 100UF M3A
C836	24073037	ELECTROLYTIC, 16V 47UF M3A
C837	24503047	PLASTIC FILM, 63V 0.33UF J
C838	24073038	ELECTROLYTIC, 16V 100UF M3A
C839	24795470	ELECTROLYTIC, 25V 47UF M
C840	24503047	PLASTIC FILM, 63V 0.33UF J
C841	24073098	ELECTROLYTIC, 450V 4.7UF M3A
C842	24073084	ELECTROLYTIC, 50V 4.7UF M3A
C843	24503041	PLASTIC FILM , 63V 0.1UF J
C844	24503037	MT PLA CAP, 63V 0.047UF J
C845	24082081	PLASTIC FILM, 630V 0.033UF
C850	24086068	ELECTROLYTIC CE692Q 250V 820UF M3D
C851	24086068	ELECTROLYTIC CE692Q 250V 820UF M3D
C852	24073034	ELECTROLYTIC, 16V 10UF M3A
C857	24092281	CERAMIC DISC, AC250V E 4700PF
C858	24092281	CERAMIC DISC, AC250V E 4700PF
C860	24073098	ELECTROLYTIC, 450V 4.7UF M3A
C862	24503041	PLASTIC FILM , 63V 0.1UF J
C863	24092469	CERAMIC DISC, 2KV B 100PF K

Location No.	Parts No.	Description
C864	24766229	ELECTROLYTIC, 50V 2.2UF M
C865	24503041	PLASTIC FILM , 63V 0.1UF J
C866	24073087	ELECTROLYTIC, 50V 22UF M3A
C867	24073087	ELECTROLYTIC, 50V 22UF M3A
C868	24073042	ELECTROLYTIC, 16V 1000UF M3A
C872	24092476	CERAMIC DISC, 2KV B 330PF K
C873	24092476	CERAMIC DISC, 2KV B 330PF K
C874	24503041	PLASTIC FILM , 63V 0.1UF J
C876	24214471	CERAMIC DISC, 500V B 470PF K
C877	24214471	CERAMIC DISC, 500V B 470PF K
C878	24073073	ELECTROLYTIC, 35V 2200UF M3A
C879	24073073	ELECTROLYTIC, 35V 2200UF M3A
C880	24591152	PLASTIC FILM, 50V 1500PF J
C881	24082229	PLASTIC FILM, 250V 0.1UF D
C882	24073094	ELECTROLYTIC, 50V 1000UF M3A
C883	24073092	ELECTROLYTIC, 50V 330UF M3A
C884	24086916	ELECTROLYTIC, 160V 330UF M3D
C885	24073060	ELECTROLYTIC, 25V 4700UF M3A
C886	24073060	ELECTROLYTIC, 25V 4700UF M3A
C887	24669222	ELECTROLYTIC, 50V 2200UF M3A
C888	24092476	CERAMIC DISC, 2KV B 330PF K
C889	24092476	CERAMIC DISC, 2KV B 330PF K
⚠ C899	24092567	CERAMIC DISC, AC250V E 1000PF M
C901	24211102	CERAMIC DISC, 2KV B 1000PF K
C902	24794101	ELECTROLYTIC, 16V 100UF M
C903	24232103	CERAMIC DISC, 50V F 0.01UF Z
C904	24436221	CERAMIC DISC, 50V SL 220PF J
C906	24679220	ELECTROLYTIC, 250V 22UF M3A
C906A	23960136	ADHESIVE, SILICONE, TSE3843-W
C907	24214101	CERAMIC DISC, 500V B 100PF K
C911	24211102	CERAMIC DISC, 2KV B 1000PF K
C912	24794101	ELECTROLYTIC, 16V 100UF M
C913	24232103	CERAMIC DISC, 50V F 0.01UF Z
C914	24436221	CERAMIC DISC, 50V SL 220PF J
C915	24679220	ELECTROLYTIC, 250V 22UF M3A
C915A	23960136	ADHESIVE, SILICONE, TSE3843-W
C917	24214101	CERAMIC DISC, 500V B 100PF K
C921	24211102	CERAMIC DISC, 2KV B 1000PF K
C922	24794101	ELECTROLYTIC, 16V 100UF M
C923	24436221	CERAMIC DISC, 50V SL 220PF J
C924	24232103	CERAMIC DISC, 50V F 0.01UF Z
C925	24679220	ELECTROLYTIC, 250V 22UF M3A
C925A	23960136	ADHESIVE, SILICONE, TSE3843-W
C926	24214101	CERAMIC DISC, 500V B 100PF K
C930	24214103	CERAMIC DISC, 500V B 0.01UF K
C935	24214103	CERAMIC DISC, 500V B 0.01UF K
C936	24214103	CERAMIC DISC, 500V B 0.01UF K
C967	24436471	CERAMIC DISC, 50V SL 470PF J
C3110	24085958	ELEC. NONPOLAR, 50V 1UF M
C3500	24073036	ELECTROLYTIC, 16V 33UF M3A
C4401	24073039	ELECTROLYTIC, 16V 220UF M3A
C4402	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4403	24073081	ELECTROLYTIC, 50V 1.OUF M3A
C4404	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4405	24092730	CERAMIC CHIP, 16V B 0.1UF K
C4406	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4420	24073039	ELECTROLYTIC, 16V 220UF M3A
C4421	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4422	24073081	ELECTROLYTIC, 50V 1.OUF M3A
C4423	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4425	24085958	ELEC. NONPOLAR, 50V 1UF M
C4430	24794100	ELECTROLYTIC, 16V 10UF M
⚠ C4433	24503269	PLASTIC FILM, 1250VH 9100PF H
C4451	24073038	ELECTROLYTIC, 16V 100UF M3A
C4681	24820123	PLASTIC FILM, 630V 0.012UF J
C4684	24820223	PLASTIC FILM, 630V 0.022UF J
C5020	24100104	CERAMIC CHIP, 25V F 0.1UF Z

Location No.	Parts No.	Description
C5030	24794101	ELECTROLYTIC, 16V 100UF M
C7001	24797470	ELECTROLYTIC, 50V 47UF M
C7002	24109103	CERAMIC CHIP, 50V B 0.01UF K
C7003	24206479	ELECTROLYTIC, 50V 4.7UF M7L 3A
C7004	24092730	CERAMIC CHIP, 16V B 0.1UF K
C7005	24092730	CERAMIC CHIP, 16V B 0.1UF K
C7006	24797470	ELECTROLYTIC, 50V 47UF M
C7007	24790470	ELECTROLYTIC, 160V 47UF M
C7008	24214472	CERAMIC DISC, 500V B 4700PF K
C7009	24214472	CERAMIC DISC, 500V B 4700PF K
C7010	24666470	ELECTORLYTIC, 16V 47UF M3A
C7011	24666470	ELECTORLYTIC, 16V 47UF M3A
C7012	24435560	CERAMIC DISC, 500V SL 56PF J
C7013	24790100	ELECTROLYTIC, 160V 10UF M
C7101	24797470	ELECTROLYTIC, 50V 47UF M
C7102	24109103	CERAMIC CHIP, 50V B 0.01UF K
C7103	24206479	ELECTROLYTIC, 50V 4.7UF M7L 3A
C7104	24092730	CERAMIC CHIP, 16V B 0.1UF K
C7105	24092730	CERAMIC CHIP, 16V B 0.1UF K
C7106	24797470	ELECTROLYTIC, 50V 47UF M
C7107	24790470	ELECTROLYTIC, 160V 47UF M
C7108	24214472	CERAMIC DISC, 500V B 4700PF K
C7109	24214472	CERAMIC DISC, 500V B 4700PF K
C7110	24666470	ELECTORLYTIC, 16V 47UF M3A
C7111	24666470	ELECTORLYTIC, 16V 47UF M3A
C7112	24435560	CERAMIC DISC, 500V SL 56PF J
C7113	24790100	ELECTROLYTIC, 160V 10UF M
C7201	24797470	ELECTROLYTIC, 50V 47UF M
C7202	24109103	CERAMIC CHIP, 50V B 0.01UF K
C7203	24206479	ELECTROLYTIC, 50V 4.7UF M7L 3A
C7204	24092730	CERAMIC CHIP, 16V B 0.1UF K
C7205	24092730	CERAMIC CHIP, 16V B 0.1UF K
C7206	24797470	ELECTROLYTIC, 50V 47UF M
C7207	24790470	ELECTROLYTIC, 160V 47UF M
C7208	24214472	CERAMIC DISC, 500V B 4700PF K
C7209	24214472	CERAMIC DISC, 500V B 4700PF K
C7210	24666470	ELECTORLYTIC, 16V 47UF M3A
C7211	24666470	ELECTORLYTIC, 16V 47UF M3A
C7212	24435560	CERAMIC DISC, 500V SL 56PF J
C7213	24790100	ELECTROLYTIC, 160V 10UF M
C7701	24567334	PLASTIC FILM, 50V 0.33UF J
C7702	24567334	PLASTIC FILM, 50V 0.33UF J
C7703	24591472	PLASTIC FILM, 50V 4700PF J
C7704	24073053	ELECTROLYTIC, 25V 100UF M3A
C7705	24073053	ELECTROLYTIC, 25V 100UF M3A
C7706	24567334	PLASTIC FILM, 50V 0.33UF J
C7721	24591102	PLASTIC FILM, 50V 1000PF J
C7722	24436331	CERAMIC DISC, 50V SL 330PF J
C7724	24073090	ELECTROLYTIC, 50V 100UF M3A
C7725	24073090	ELECTROLYTIC, 50V 100UF M3A
C7726	24353271	CERAMIC DISC, 50V CH 270PF J
C7727	24436331	CERAMIC DISC, 50V SL 330PF J
C7729	24591102	PLASTIC FILM, 50V 1000PF J
C7730	24436331	CERAMIC DISC, 50V SL 330PF J
C7732	24591102	PLASTIC FILM, 50V 1000PF J
C7733	24436331	CERAMIC DISC, 50V SL 330PF J
C7735	24073090	ELECTROLYTIC, 50V 100UF M3A
C7736	24073090	ELECTROLYTIC, 50V 100UF M3A
C7737	24591102	PLASTIC FILM, 50V 1000PF J
C7738	24436331	CERAMIC DISC, 50V SL 330PF J
C7740	24591102	PLASTIC FILM, 50V 1000PF J
C7741	24436331	CERAMIC DISC, 50V SL 330PF J
C7766	24667221	ELECTROLYTIC, 25V 220UF M3A
C7767	24667101	ELECTROLYTIC, 25V 100UF M3A
C7768	24667101	ELECTROLYTIC, 25V 100UF M3A
C7769	24109103	CERAMIC CHIP, 50V B 0.01UF K
C7774	24105331	CERAMIC CHIP, 50V CH 330PF J

Location No.	Parts No.	Description
C7779	24105331	CERAMIC CHIP, 50V CH 330PF J
C7780	24436471	CERAMIC DISC, 50V SL 470PF J
C7783	24436471	CERAMIC DISC, 50V SL 470PF J
C7788	24353101	CERAMIC DISC, 50V CH 100PF J
C7789	24591472	PLASTIC FILM, 50V 4700PF J
C7791	24073056	ELECTROLYTIC, 25V 470UF M3A
C7792	24591472	PLASTIC FILM, 50V 4700PF J
C7793	24567104	PLASTIC FILM, 50V 0.1UF J
C7794	24567104	PLASTIC FILM, 50V 0.1UF J
C7796	24073091	ELECTROLYTIC, 50V 220UF M3A
C7797	24073094	ELECTROLYTIC, 50V 1000UF M3A
C7798	24073091	ELECTROLYTIC, 50V 220UF M3A
C7810	24092511	CERAMIC CHIP, 50V CH 470PF B
C7811	24105561	CERAMIC CHIP, 50V CH 560PF J
C7812	24109103	CERAMIC CHIP, 50V B 0.01UF K
C7817	24591222	PLASTIC FILM, 50V 2200PF J
C7818	24591102	PLASTIC FILM, 50V 1000PF J
C7819	24591102	PLASTIC FILM, 50V 1000PF J
C7820	24591432	PLASTIC FILM, 50V 4300PF J
C7821	24669010	ELECTROLYTIC, 50V 1UF M3A
C7822	24503053	PLASTIC FILM, 63V 1UF J
C9100	24436471	CERAMIC DISC, 50V SL 470PF J
C9200	24436471	CERAMIC DISC, 50V SL 470PF J
CA09	24105101	CERAMIC CHIP, 50V CH 100PF J
CA10	24105101	CERAMIC CHIP, 50V CH 100PF J
CA33	24100103	CERAMIC CHIP, 50V F 0.01UF Z
CA42	24794100	ELECTROLYTIC, 16V 10UF M
CA43	24109103	CERAMIC CHIP, 50V B 0.01UF K
CA45	24105330	CERAMIC CHIP, 50V CH 33PF J
CA58	24794330	ELECTROLYTIC, 16V 33UF M
CA68	24794100	ELECTROLYTIC, 16V 10UF M
CA69	24100103	CERAMIC CHIP, 50V F 0.01UF Z
CA89	24232103	CERAMIC DISC, 50V F 0.01UF Z
CA90	24092743	CERAMIC CHIP, 10V F 0.47UF Z
CA91	24100103	CERAMIC CHIP, 50V F 0.01UF Z
CA92	24666101	ELECTROLYTIC, 16V 100UF M3A
CA93	24100103	CERAMIC CHIP, 50V F 0.01UF Z
CA95	24666100	ELECTROLYTIC, 10V 10UF M3A
CA96	24100103	CERAMIC CHIP, 50V F 0.01UF Z
CA99	24105101	CERAMIC CHIP, 50V CH 100PF J
CB01	24794470	ELECTROLYTIC, 16V 47UF M
CB20	24109103	CERAMIC CHIP, 50V B 0.01UF K
CB21	24109103	CERAMIC CHIP, 50V B 0.01UF K
CB22	24109103	CERAMIC CHIP, 50V B 0.01UF K
CB23	24109103	CERAMIC CHIP, 50V B 0.01UF K
CB24	24109103	CERAMIC CHIP, 50V B 0.01UF K
CB90	24100103	CERAMIC CHIP, 50V F 0.01UF Z
CC01	24109103	CERAMIC CHIP, 50V B 0.01UF K
CC01	24109102	CERAMIC CHIP, 50V B 1000PF K
CC02	24109102	CERAMIC CHIP, 50V B 1000PF K
CC03	24109102	CERAMIC CHIP, 50V B 1000PF K
CC04	24109102	CERAMIC CHIP, 50V B 1000PF K
CC05	24109102	CERAMIC CHIP, 50V B 1000PF K
CC06	24109102	CERAMIC CHIP, 50V B 1000PF K
CC07	24109102	CERAMIC CHIP, 50V B 1000PF K
CC08	24109102	CERAMIC CHIP, 50V B 1000PF K
CC09	24109102	CERAMIC CHIP, 50V B 1000PF K
CC10	24109102	CERAMIC CHIP, 50V B 1000PF K
CC33	24105101	CERAMIC CHIP, 50V CH 100PF J
CC47	24109102	CERAMIC CHIP, 50V B 1000PF K
CC48	24109102	CERAMIC CHIP, 50V B 1000PF K
CC51	24109103	CERAMIC CHIP, 50V B 0.01UF K
CC52	24109103	CERAMIC CHIP, 50V B 0.01UF K
CD01	24797100	ELECTROLYTIC, 50V 10UF M
CD02	24797220	ELECTROLYTIC, 50V 22UF M
CD03	24503041	PLASTIC FILM , 63V 0.1UF J
CD04	24503041	PLASTIC FILM , 63V 0.1UF J

Location No.	Parts No.	Description
CD05	24590102	PLASTIC FILM, 50V 1000PF J
CD06	24503045	PLASTIC FILM, 63V 0.22UF J
CD07	24797229	ELECTROLYTIC, 50V 2.2UF M
CD08	24794221	ELECTROIYTIC, 16V 220UF M
CD09	24232103	CERAMIC DISC, 50V F 0.01UF Z
CD10	24797479	ELECTROLYTIC, 50V 4.7UF M
CD11	24797479	ELECTROLYTIC, 50V 4.7UF M
CD12	24797479	ELECTROLYTIC, 50V 4.7UF M
CD13	24797479	ELECTROLYTIC, 50V 4.7UF M
CD14	24797479	ELECTROLYTIC, 50V 4.7UF M
CD15	24797479	ELECTROLYTIC, 50V 4.7UF M
CD16	24797479	ELECTROLYTIC, 50V 4.7UF M
CD17	24503045	PLASTIC FILM, 63V 0.22UF J
CD18	24590102	PLASTIC FILM, 50V 1000PF J
CD19	24590273	PLASTIC FILM, 50V 0.027UF J
CD20	24590683	PLASTIC FILM, 50V 0.068UF J
CD21	24590563	PLASTIC FILM, 50V 0.056UF J
CD22	24797100	ELECTROLYTIC, 50V 10UF M
CD23	24797220	ELECTROLYTIC, 50V 22UF M
CD24	24590103	PLASTIC FILM, 50V 0.01UF J
CD25	24797010	ELECTROLYTIC, 50V 1UF M
CD26	24590103	PLASTIC FILM, 50V 0.01UF J
CR12	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR13	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR14	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR99	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CS01	24797229	ELECTROLYTIC, 50V 2.2UF M
CS02	24797229	ELECTROLYTIC, 50V 2.2UF M
CS03	24797229	ELECTROLYTIC, 50V 2.2UF M
CS04	24797229	ELECTROLYTIC, 50V 2.2UF M
CS05	24797229	ELECTROLYTIC, 50V 2.2UF M
CS06	24797229	ELECTROLYTIC, 50V 2.2UF M
CS07	24797229	ELECTROLYTIC, 50V 2.2UF M
CS08	24797229	ELECTROLYTIC, 50V 2.2UF M
CS09	24797229	ELECTROLYTIC, 50V 2.2UF M
CS10	24797229	ELECTROLYTIC, 50V 2.2UF M
CS13	24794100	ELECTROLYTIC, 16V 10UF M
CS14	24794100	ELECTROLYTIC, 16V 10UF M
CS18	24794100	ELECTROLYTIC, 16V 10UF M
CS19	24794100	ELECTROLYTIC, 16V 10UF M
CS20	24797478	ELECTROLYTIC, 50V 0.47UF M
CT01	24792221	ELECTROLYTIC CE04G 6.3V 220UF M
CT02	24109103	CERAMIC CHIP, 50V B 0.01UF K
CT03	24109103	CERAMIC CHIP, 50V B 0.01UF K
CT04	24793101	ELECTROLYTIC, 10V 100UF M
CT05	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT06	24793470	ELECTROLYTIC CE04G 10V 47UF M
CT07	24092538	CERAMIC CHIP, 10V F 1UF Z
CT08	24105560	CERAMIC CHIP, 50V CH 56PF J
CT09	24105560	CERAMIC CHIP, 50V CH 56PF J
CT10	24793470	ELECTROLYTIC CE04G 10V 47UF M
CT11	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT12	24793470	ELECTROLYTIC CE04G 10V 47UF M
CT13	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT14	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT15	24105101	CERAMIC CHIP, 50V CH 100PF J
CT16	24105100	CERAMIC CHIP, 50V CH 10PF D
CT17	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT19	24794100	ELECTROLYTIC, 16V 10UF M
CT20	24109103	CERAMIC CHIP, 50V B 0.01UF K
CT22	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT99	24793102	ELECTROLYTIC, 10V 1000UF M
CV02	24092621	CERAMIC CHIP, 10V B 1UF K
CV03	24092621	CERAMIC CHIP, 10V B 1UF K
CV04	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV06	24092621	CERAMIC CHIP, 10V B 1UF K
CV07	24100104	CERAMIC CHIP, 25V F 0.1UF Z

Location No.	Parts No.	Description
CV08	24794101	ELECTROLYTIC, 16V 100UF M
CV09	24092621	CERAMIC CHIP, 10V B 1UF K
CV10	24794100	ELECTROLYTIC, 16V 10UF M
CV11	24092621	CERAMIC CHIP, 10V B 1UF K
CV12	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV14	24092538	CERAMIC CHIP, 10V F 1UF Z
CV15	24092538	CERAMIC CHIP, 10V F 1UF Z
CV30	24794220	ELECTROLYTIC, 16V 22UF M
CV31	24794220	ELECTROLYTIC, 16V 22UF M
CV32	24794101	ELECTROLYTIC, 16V 100UF M
CV33	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV36	24794470	ELECTROLYTIC, 16V 47UF M
CV37	24109102	CERAMIC CHIP, 50V B 1000PF K
CV38	24794470	ELECTROLYTIC, 16V 47UF M
CV40	24794470	ELECTROLYTIC, 16V 47UF M
CV41	24794470	ELECTROLYTIC, 16V 47UF M
CV43	24794470	ELECTROLYTIC, 16V 47UF M
CV44	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV45	24092621	CERAMIC CHIP, 10V B 1UF K
CV47	24092621	CERAMIC CHIP, 10V B 1UF K
CV48	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV49	24794470	ELECTROLYTIC, 16V 47UF M
CV51	24105330	CERAMIC CHIP, 50V CH 33PF J
CV64	24794471	ELECTROLYTIC, 16V 470UF M
CV65	24794101	ELECTROLYTIC, 16V 100UF M
CV66	24100104	CERAMIC CHIP, 25V F 0.1UF Z
RESISTORS		
R101	24383153	OXIDE METAL FILM, 2W 15K OHM J
R205	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R206	24871331	CHIP, METAL FILM, 1/8W 330 OHM J
R213	24871681	CHIP, METAL FILM, 1/8W 680 OHM J
R214	24871681	CHIP, METAL FILM, 1/8W 680 OHM J
R215	24871681	CHIP, METAL FILM, 1/8W 680 OHM J
R216	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R217	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
R218	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R219	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R220	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R221	24011391	CHIP, METAL FILM, 1/20W 390 OHM J
R222	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R230	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R231	24872471	CHIP, METAL FILM, 1/16W 470 OHM J
R232	24872332	CHIP, METAL FILM, 1/16W 3.3K OHM J
R233	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R234	24366331	CARBON FILM, 1/6W 330 OHM J
R241	24367273	CARBON FILM, 1/6W 27K OHM G
R242	24367183	CARBON FILM, 1/6W 18K OHM G
R243	24367183	CARBON FILM, 1/6W 18K OHM G
R244	24366823	CARBON FILM, 1/6W 82K OHM J
R245	24366123	CARBON FILM, 1/6W 12K OHM J
R245	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R246	24366103	CARBON FILM, 1/6W 10K OHM J
R247	24366102	CARBON FILM, 1/6W 1K OHM J
R292	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R294	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R301	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R302	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R303	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R304	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R305	24322828	OXIDE METAL FILM, 1W 0.82 OHM J
R306	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
R307	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R308	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R310	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R312	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R314	24011473	CHIP, METAL FILM, 1/20W 47K OHM J

Location No.	Parts No.	Description
R315	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
R316	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R319	24011153	CHIP, METAL FILM, 1/2OW 15K OHM J
R320	24998473	CHIP, 1/16W 47K OHM
R321	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R322	24998123	CHIP, 1/16W 12K OHM
R323	24998123	CHIP, 1/16W 12K OHM
R324	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R325	24011512	CHIP, METAL FILM, 1/20W 5.1K OHM J
R326	24019388	CHIP, 1/16W 10K OHM F
R327	24019388	CHIP, 1/16W 10K OHM F
R328	24998103	CHIP, 1/16W 10K OHM
R329	24019388	CHIP, 1/16W 10K OHM F
R330	24000221	METAL FILM, 1/4W 20K OHM F
R331	24019119	METAL FILM, 1/6W 30K OHM J
R332	24998472	CHIP, 1/16W 4.7K OHM
R333	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R334	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R335	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R336	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R337	24321129	OXIDE METAL FILM, 1/2W 1.2 OHM J
R338	24011183	CHIP, METAL FILM, 1/20W 18K OHM J
R339	24011273	CHIP, METAL FILM, 1/20W 27K OHM J
R340	24011824	CHIP, METAL FILM, 1/20W 820K OHM J
R341	24011273	CHIP, METAL FILM, 1/20W 27K OHM J
R342	24011822	CHIP, METAL FILM, 1/20W 8.2K OHM J
R343	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R344	24382151	OXIDE METAL FILM, 1W 150 OHM J
R346	24382391	OXIDE METAL FILM, 1W 390 OHM J
R347	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R348	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R349	24011392	CHIP, METAL FILM, 1/20W 3.9K OHM J
R350	24011822	CHIP, METAL FILM, 1/20W 8.2K OHM J
R355	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R359	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R360	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R362	24011683	CHIP, METAL FILM, 1/20W 68K OHM J
R363	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R365	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R370	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R371	24011823	CHIP, METAL FILM, 1/20W 82K OHM J
R372	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R373	24011823	CHIP, METAL FILM, 1/20W 82K OHM J
R374	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R375	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R377	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R378	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R379	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R381	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R382	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R383	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R384	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R385	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R390	24382561	OXIDE METAL FILM, 1W 560 OHM J
R391	24382561	OXIDE METAL FILM, 1W 560 OHM J
R392	24382561	OXIDE METAL FILM, 1W 560 OHM J
R403	24382101	OXIDE METAL FILM, 1W 100 OHM J
R404	24366272	CARBON FILM, 1/6W 2.7K OHM J
R405	24366101	CARBON FILM, 1/6W 100 OHM J
R406	24382222	OXIDE METAL FILM, 1W 2.2K OHM J
R407	24381100	OXIDE METAL FILM, 1/2W 10 OHM J
R409	24555220	OXIDE METAL FILM, 3W 22 OHM J
R410	24555220	OXIDE METAL FILM, 3W 22 OHM J
R411	24323479	METAL FILM, 2W 4.7 OHM J
R412	24383223	OXIDE METAL FILM, 2W 22K OHM J
R413	24366101	CARBON FILM, 1/6W 100 OHM J
R414	24019259	FUSIBLE, 1/4W 27 OHM G

Location No.	Parts No.	Description
R415	24366102	CARBON FILM, 1/6W 1K OHM J
R416	24383101	OXIDE METAL FILM, 2W 100 OHM J
R418	24382104	OXIDE METAL FILM, 1W 100K OHM J
R419	24942102	CARBON COMPOSITION, 1/2W 1K OHM J
R420	24366103	CARBON FILM, 1/6W 10K OHM J
R421	24366223	CARBON FILM, 1/6W 22K OHM J
R422	24366223	CARBON FILM, 1/6W 22K OHM J
R423	24942102	CARBON COMPOSITION, 1/2W 1K OHM J
R424	24376104	CARBON FILM, 1/2W 10OK OHM J
R425	24376104	CARBON FILM, 1/2W 10OK OHM J
R431	24383102	OXIDE METAL FILM, 2W 1K OHM J
R432	24376274	CARBON FILM, 1/2W 270K OHM J
R433	24376274	CARBON FILM, 1/2W 270K OHM J
R434	24376274	CARBON FILM, 1/2W 270K OHM J
R435	24366472	CARBON FILM, 1/6W 4.7K OHM J
R441	24533331	FUSIBLE, 2W 330 OHM J
R442	24383680	OXIDE METAL FILM, 2W 68 OHM J (43CVR9UR)
R443	24988011	METAL FILM, 1/2W 1 OHM J
R444	24322398	OXIDE METAL FILM, 1W 0.39 OHM J
R446	24366822	CARBON FILM, 1/6W 8.2K OHM J
R447	24382473	OXIDE METAL FILM, 1W 47K OHM J
R448	24366682	CARBON FILM, 1/6W 6.8K OHM J
R449	24366152	CARBON FILM, 1/6W 1.5K OHM J
R460	24366103	CARBON FILM, 1/6W 10K OHM J
R461	24366103	CARBON FILM, 1/6W 10K OHM J
R462	24366103	CARBON FILM, 1/6W 10K OHM J
R463	24366472	CARBON FILM, 1/6W 4.7K OHM J
R464	24366472	CARBON FILM, 1/6W 4.7K OHM J
R465	24366474	CARBON FILM, 1/6W 470K OHM J
R466	24366103	CARBON FILM, 1/6W 10K OHM J
R467	24366473	CARBON FILM, 1/6W 47K OHM J
R469	24366101	CARBON FILM, 1/6W 100 OHM J
R470	24366224	CARBON FILM, 1/6W 220K OHM J
R472	24366101	CARBON FILM, 1/6W 100 OHM J
R473	24000362	METAL FILM, 1/4W 1.5K OHM F
R474	24000370	METAL FILM, 1/4W 3.3K OHM F
R476	24000137	METAL FILM, 1/4W 150 OHM F
R477	24998471	CHIP, 1/16W 470 OHM
R479	24366103	CARBON FILM, 1/6W 10K OHM J
R480	24366223	CARBON FILM, 1/6W 22K OHM J
R481	24366103	CARBON FILM, 1/6W 10K OHM J
R481	24322568	OXIDE METAL FILM, 1W 0.56 OHM J
R482	24366223	CARBON FILM, 1/6W 22K OHM J
R482	24552271	OXIDE METAL FILM, 1/2W 270 OHM J
R483	24366332	CARBON FILM, 1/6W 3.3K OHM J
R483	24552121	OXIDE METAL FILM, 1/2W 120 OHM J
R484	24366474	CARBON FILM, 1/6W 470K OHM J
R485	24366103	CARBON FILM, 1/6W 10K OHM J
R486	24366103	CARBON FILM, 1/6W 10K OHM J
R488	24366102	CARBON FILM, 1/6W 1K OHM J
R488	24366392	CARBON FILM, 1/6W 3.9K OHM J
R489	24366100	CARBON FILM, 1/6W 10 OHM J
R489	24366222	CARBON FILM, 1/6W 2.2K OHM J
R490	24552331	OXIDE METAL FILM, 1/2W 330 OHM J
R491	24366472	CARBON FILM, 1/6W 4.7K OHM J
R513	24366101	CARBON FILM, 1/6W 100 OHM J
R513	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R515	24366103	CARBON FILM, 1/6W 10K OHM J
R516	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R517	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R543	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
R548	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
R552	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R553	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
R554	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R555	24011101	CHIP, METAL FILM, 1/20W 100 OHM J

Location No.	Parts No.	Description
R561	24552181	OXIDE METAL FILM, 1/2W 180 OHM J
R569	24011154	CHIP, METAL FILM, 1/20W 150K OHM J
R574	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R575	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R576	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R577	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R578	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R579	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R581	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R582	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R584	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R592	24011272	CHIP, METAL FILM, 1/20W 2.7K OHM J
R593	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R594	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R595	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R596	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R597	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R601	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
R602	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
R603	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R604	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R605	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R606	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R607	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R608	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R609	24366229	CARBON FILM, 1/6W 2.2 OHM J
R610	24366229	CARBON FILM, 1/6W 2.2 OHM J
R611	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R612	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R613	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R614	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R615	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R616	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R617	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R618	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R619	24011224	CHIP, METAL FILM, 1/20W 220K OHM J
R621	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
R622	24011153	CHIP, METAL FILM, 1/2OW 15K OHM J
R623	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R624	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R636	24872123	CHIP, METAL FILM, 1/16W 12K OHM J
R637	24872822	CHIP, METAL FILM, 1/16W 8.2K OHM J
R638	24872123	CHIP, METAL FILM, 1/16W 12K OHM J
R639	24872822	CHIP, METAL FILM, 1/16W 8.2K OHM J
R641	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R642	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R651	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
R652	24011273	CHIP, METAL FILM, 1/20W 27K OHM J
R653	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R654	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R655	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R656	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R657	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R658	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R659	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R660	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R661	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R662	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R663	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R664	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R665	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R666	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R667	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R668	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R669	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R670	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R671	24382820	OXIDE METAL FILM, 1W 82 OHM J

Location No.	Parts No.	Description
R672	24382820	OXIDE METAL FILM, 1W 82 OHM J
R673	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R674	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R675	24382390	OXIDE METAL FILM, 1W 39 OHM J
R690	24011100	CHIP, METAL FILM, 1/20W 10 OHM J
R691	24011100	CHIP, METAL FILM, 1/20W 10 OHM J
⚠ R801	24009954	METAL FILN, 1/2W 2.2M OHM J
⚠ R802	24009954	METAL FILN, 1/2W 2.2M OHM J
R803	24366222	CARBON FILM, 1/6W 2.2K OHM J
R805	24366471	CARBON FILM, 1/6W 470 OHM J
R806	24366471	CARBON FILM, 1/6W 470 OHM J
R807	24366223	CARBON FILM, 1/6W 22K OHM J
R808	24552560	OXIDE METAL FILM, 1/2W 56 OHM J
R809	24321689	OXIDE METAL FILM, 1/2W 6.8 OHM J
R810	24382680	OXIDE METAL FILM, 1W 68 OHM J
R811	24552121	OXIDE METAL FILM, 1/2W 120 OHM J
R812	24552390	OXIDE METAL FILM, 1/2W 39 OHM J
R813	24366150	CARBON FILM, 1/6W 15 OHM J
R815	24552100	OXIDE METAL FILM, 1/2W 10 OHM J
R817	24377224	CARBON FILM, 1W 220K OHM J
R820	24007061	CERAMIC COVERED, 2W 1.8 OHM K
R821	24510479	CERAMIC COVERED, 5W 4.7 OHM J
R827	24383103	OXIDE METAL FILM, 2W 10K OHM J
R828	24383103	OXIDE METAL FILM, 2W 10K OHM J
R836	24366332	CARBON FILM, 1/6W 3.3K OHM J
R837	24381150	OXIDE METAL FILM, 1/2W 15 OHM J
R838	24366332	CARBON FILM, 1/6W 3.3K OHM J
R839	24366102	CARBON FILM, 1/6W 1K OHM J
R840	24988059	METAL FILM, 2W 4.7 J
R841	24321479	OXIDE METAL FILM, 1/2W 4.7 OHM J
R842	24383333	OXIDE METAL FILM, 2W 33K OHM J
R843	24383473	OXIDE METAL FILM, 2W 47K OHM J
R844	24382124	OXIDE METAL FILM, 1W 120K OHM J
R845	24366332	CARBON FILM, 1/6W 3.3K OHM J
R846	24366102	CARBON FILM, 1/6W 1K OHM J
R847	24366332	CARBON FILM, 1/6W 3.3K OHM J
R848	24366473	CARBON FILM, 1/6W 47K OHM J
R849	24366153	CARBON FILM, 1/6W 15K OHM J
R850	24366331	CARBON FILM, 1/6W 330 OHM J
R851	24366331	CARBON FILM, 1/6W 330 OHM J
R853	24366103	CARBON FILM, 1/6W 10K OHM J
R854	24366332	CARBON FILM, 1/6W 3.3K OHM J
R856	24366472	CARBON FILM, 1/6W 4.7K OHM J
R857	24366103	CARBON FILM, 1/6W 10K OHM J
R860	24510479	CERAMIC COVERED, 5W 4.7 OHM J
R861	24552562	OXIDE METAL FILM, 1/2W 5.6K OHM J
R862	24366103	CARBON FILM, 1/6W 10K OHM J
R865	24545109	FUSIBLE, 1/4W 1 OHM J
R876	24366100	CARBON FILM, 1/6W 10 OHM J
R881	24366152	CARBON FILM, 1/6W 1.5K OHM J
R883	24381682	OXIDE METAL FILM, 1/2W 6.8K OHM J
R884	24366102	CARBON FILM, 1/6W 1K OHM J
R885	24366332	CARBON FILM, 1/6W 3.3K OHM J
R890	24382333	OXIDE METAL FILM, 1W 33K OHM J
⚠ R899	24005014	METAL FILM, 1W 8.2M OHM J
R901	24366101	CARBON FILM, 1/6W 100 OHM J
R903	24942101	CARBON COMPOSITION GF 1/2W 100 J
R905	24366270	CARBON FILM, 1/6W 27 OHM J
R906	24366271	CARBON FILM, 1/6W 270 OHM J
R908	24366680	CARBON FILM, 1/6W 68 OHM J
R909	24366270	CARBON FILM, 1/6W 27 OHM J
R911	24366101	CARBON FILM, 1/6W 100 OHM J
R913	24942101	CARBON COMPOSITION GF 1/2W 100 J
R915	24366270	CARBON FILM, 1/6W 27 OHM J
R916	24366271	CARBON FILM, 1/6W 270 OHM J
R918	24366680	CARBON FILM, 1/6W 68 OHM J
R919	24366180	CARBON FILM, 1/6W 18 OHM J

Location No.	Parts No.	Description
R920	24366222	CARBON FILM, 1/6W 2.2K OHM J
R921	24366101	CARBON FILM, 1/6W 100 OHM J
R923	24942101	CARBON COMPOSITION GF 1/2W 100 J
R925	24366180	CARBON FILM, 1/6W 18 OHM J
R926	24366271	CARBON FILM, 1/6W 270 OHM J
R928	24366680	CARBON FILM, 1/6W 68 OHM J
R929	24366270	CARBON FILM, 1/6W 27 OHM J
R930	24366222	CARBON FILM, 1/6W 2.2K OHM J
R931	24568472	CERAMIC COVERED, 7W 4.7K OHM J
R932	24568472	CERAMIC COVERED, 7W 4.7K OHM J
R933	24366560	CARBON FILM, 1/6W 56 OHM J
R933	24000907	FUSIBLE, 1W 3.9 OHM J
R934	24366560	CARBON FILM, 1/6W 56 OHM J
R938	24366150	CARBON FILM, 1/6W 15 OHM J
R941	24568472	CERAMIC COVERED, 7W 4.7K OHM J
R942	24568472	CERAMIC COVERED, 7W 4.7K OHM J
R943	24366560	CARBON FILM, 1/6W 56 OHM J
R944	24366560	CARBON FILM, 1/6W 56 OHM J
R945	24366150	CARBON FILM, 1/6W 15 OHM J
R948	24366222	CARBON FILM, 1/6W 2.2K OHM J
R950	24366222	CARBON FILM, 1/6W 2.2K OHM J
R951	24568472	CERAMIC COVERED, 7W 4.7K OHM J
R952	24568472	CERAMIC COVERED, 7W 4.7K OHM J
R953	24366560	CARBON FILM, 1/6W 56 OHM J
R954	24366560	CARBON FILM, 1/6W 56 OHM J
R958	24366150	CARBON FILM, 1/6W 15 OHM J
R967	24366681	CARBON FILM, 1/6W 680 OHM J
R968	24366222	CARBON FILM, 1/6W 2.2K OHM J
R978	24366222	CARBON FILM, 1/6W 2.2K OHM J
R987	24366101	CARBON FILM, 1/6W 100 OHM J
R988	24366222	CARBON FILM, 1/6W 2.2K OHM J
R991	24366222	CARBON FILM, 1/6W 2.2K OHM J
R992	24366222	CARBON FILM, 1/6W 2.2K OHM J
R995	24366330	CARBON FILM, 1/6W 33 OHM J
R1063	24000445	CHIP JUMPER, 1608TYPE
R1065	24000445	CHIP JUMPER, 1608TYPE
R3105	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R3106	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R3500	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R3501	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R3503	24011822	CHIP, METAL FILM, 1/20W 8.2K OHM J
R3516	24000445	CHIP JUMPER, 1608TYPE
R3520	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R3521	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R3522	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4401	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R4402	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R4403	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4404	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R4405	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R4406	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4407	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4408	24011153	CHIP, METAL FILM, 1/2OW 15K OHM J
R4409	24871152	CHIP, METAL FILM, 1/8W 1.5K OHM J
R4411	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4412	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4420	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
R4421	24011330	CHIP, METAL FILM, 1/20W 33 OHM J
R4422	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R4423	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
R4427	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4428	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4430	24381150	OXIDE METAL FILM, 1/2W 15 OHM J
R4431	24366102	CARBON FILM, 1/6W 1K OHM J
R4444	24383102	OXIDE METAL FILM, 2W 1K OHM J
R4451	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R4452	24011103	CHIP, METAL FILM, 1/20W 10K OHM J

Location No.	Parts No.	Description
R4453	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4454	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4454	24871152	CHIP, METAL FILM, 1/8W 1.5K OHM J
R4455	24011272	CHIP, METAL FILM, 1/20W 2.7K OHM J
R4456	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R4457	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R4458	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4459	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R4460	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R7002	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7003	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7004	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7005	24871221	CHIP, METAL FILM, 1/8W 220 OHM J
R7006	24871221	CHIP, METAL FILM, 1/8W 220 OHM J
R7007	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7008	24872681	CHIP, METAL FILM, 1/16W 680 OHM J
R7009	24872333	CHIP, METAL FILM, 1/16W 33K OHM J
R7010	24872273	CHIP, METAL FILM, 1/16W 27K OHM J
R7011	24872333	CHIP, METAL FILM, 1/16W 33K OHM J
R7012	24872121	CHIP, METAL FILM, 1/16W 120 OHM J
R7013	24872821	CHIP, METAL FILM, 1/16W 820 OHM J
R7014	24872681	CHIP, METAL FILM, 1/16W 680 OHM J
R7015	24871471	CHIP, METAL FILM, 1/8W 470 OHM J
R7016	24871471	CHIP, METAL FILM, 1/8W 470 OHM J
R7017	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7018	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7019	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7020	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7021	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7022	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7023	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7024	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7025	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7026	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7027	24552331	OXIDE METAL FILM, 1/2W 330 OHM J
R7028	24872751	CHIP, METAL FILM, 1/16W 750 OHM J
R7029	24872122	CHIP, METAL FILM, 1/16W 1.2K OHM J
R7030	24872683	CHIP, METAL FILM, 1/16W 68K OHM J
R7031	24872683	CHIP, METAL FILM, 1/16W 68K OHM J
R7032	24872751	CHIP, METAL FILM, 1/16W 750 OHM J
R7033	24872122	CHIP, METAL FILM, 1/16W 1.2K OHM J
R7034	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7035	24553330	OXIDE METAL FILM, 1W 33 OHM J
R7036	24321229	OXIDE METAL FILM, 1/2W 2.2 OHM J
R7037	24553330	OXIDE METAL FILM, 1W 33 OHM J
R7038	24322229	OXIDE METAL FILM, 1W 2.2 OHM J
R7039	24554221	OXIDE METAL FILM, 2W 220 OHM J
R7102	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7103	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7104	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7105	24871221	CHIP, METAL FILM, 1/8W 220 OHM J
R7106	24871221	CHIP, METAL FILM, 1/8W 220 OHM J
R7107	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7108	24872681	CHIP, METAL FILM, 1/16W 680 OHM J
R7109	24872333	CHIP, METAL FILM, 1/16W 33K OHM J
R7110	24872273	CHIP, METAL FILM, 1/16W 27K OHM J
R7111	24872333	CHIP, METAL FILM, 1/16W 33K OHM J
R7112	24872121	CHIP, METAL FILM, 1/16W 120 OHM J
R7113	24872821	CHIP, METAL FILM, 1/16W 820 OHM J
R7114	24872681	CHIP, METAL FILM, 1/16W 680 OHM J
R7115	24871471	CHIP, METAL FILM, 1/8W 470 OHM J
R7116	24871471	CHIP, METAL FILM, 1/8W 470 OHM J
R7117	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7118	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7119	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7120	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7121	24871100	CHIP, METAL FILM, 1/8W 10 OHM J

Location No.	Parts No.	Description
R7122	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7123	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7124	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7125	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7126	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7127	24552331	OXIDE METAL FILM, 1/2W 330 OHM J
R7128	24872751	CHIP, METAL FILM, 1/16W 750 OHM J
R7129	24872122	CHIP, METAL FILM, 1/16W 1.2K OHM J
R7130	24872683	CHIP, METAL FILM, 1/16W 68K OHM J
R7131	24872683	CHIP, METAL FILM, 1/16W 68K OHM J
R7132	24872751	CHIP, METAL FILM, 1/16W 750 OHM J
R7133	24872122	CHIP, METAL FILM, 1/16W 1.2K OHM J
R7134	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7135	24553330	OXIDE METAL FILM, 1W 33 OHM J
R7136	24321229	OXIDE METAL FILM, 1/2W 2.2 OHM J
R7137	24553330	OXIDE METAL FILM, 1W 33 OHM J
R7138	24322229	OXIDE METAL FILM, 1W 2.2 OHM J
R7139	24554221	OXIDE METAL FILM, 2W 220 OHM J
R7202	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7203	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7204	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7205	24871221	CHIP, METAL FILM, 1/8W 220 OHM J
R7206	24871221	CHIP, METAL FILM, 1/8W 220 OHM J
R7207	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7208	24872681	CHIP, METAL FILM, 1/16W 680 OHM J
R7209	24872333	CHIP, METAL FILM, 1/16W 33K OHM J
R7210	24872273	CHIP, METAL FILM, 1/16W 27K OHM J
R7211	24872333	CHIP, METAL FILM, 1/16W 33K OHM J
R7212	24872121	CHIP, METAL FILM, 1/16W 120 OHM J
R7213	24872821	CHIP, METAL FILM, 1/16W 820 OHM J
R7214	24872681	CHIP, METAL FILM, 1/16W 680 OHM J
R7215	24871471	CHIP, METAL FILM, 1/8W 470 OHM J
R7216	24871471	CHIP, METAL FILM, 1/8W 470 OHM J
R7217	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7218	24872101	CHIP, METAL FILM, 1/16W 100 OHM J
R7219	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7220	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7221	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7222	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7223	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7224	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7225	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7226	24871100	CHIP, METAL FILM, 1/8W 10 OHM J
R7227	24552331	OXIDE METAL FILM, 1/2W 330 OHM J
R7228	24872751	CHIP, METAL FILM, 1/16W 750 OHM J
R7229	24872122	CHIP, METAL FILM, 1/16W 1.2K OHM J
R7230	24872683	CHIP, METAL FILM, 1/16W 68K OHM J
R7231	24872683	CHIP, METAL FILM, 1/16W 68K OHM J
R7232	24872751	CHIP, METAL FILM, 1/16W 750 OHM J
R7233	24872122	CHIP, METAL FILM, 1/16W 1.2K OHM J
R7234	24872102	CHIP, METAL FILM, 1/16W 1K OHM J
R7235	24553330	OXIDE METAL FILM, 1W 33 OHM J
R7236	24321229	OXIDE METAL FILM, 1/2W 2.2 OHM J
R7237	24553330	OXIDE METAL FILM, 1W 33 OHM J
R7238	24322229	OXIDE METAL FILM, 1W 2.2 OHM J
R7239	24554221	OXIDE METAL FILM, 2W 220 OHM J
R7701	24366333	CARBON FILM, 1/6W 33K OHM J
R7707	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7708	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7710	24384121	OXIDE METAL FILM, 3W 120 OHM J
R7711	24548189	FUSIBLE, 2W 1.8 OHM J
R7712	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7713	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7715	24384121	OXIDE METAL FILM, 3W 120 OHM J
R7716	24548189	FUSIBLE, 2W 1.8 OHM J
R7717	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7718	24366472	CARBON FILM, 1/6W 4.7K OHM J

Location No.	Parts No.	Description
R7720	24384121	OXIDE METAL FILM, 3W 120 OHM J
R7721	24548189	FUSIBLE, 2W 1.8 OHM J
R7722	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7723	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7725	24384121	OXIDE METAL FILM, 3W 120 OHM J
R7726	24548189	FUSIBLE, 2W 1.8 OHM J
R7727	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7728	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7730	24384121	OXIDE METAL FILM, 3W 120 OHM J
R7731	24548189	FUSIBLE, 2W 1.8 OHM J
R7732	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7733	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7735	24384121	OXIDE METAL FILM, 3W 120 OHM J
R7736	24548189	FUSIBLE, 2W 1.8 OHM J
R7760	24366103	CARBON FILM, 1/6W 10K OHM J
R7761	24366333	CARBON FILM, 1/6W 33K OHM J
R7763	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R7766	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R7767	24011153	CHIP, METAL FILM, 1/2OW 15K OHM J
R7775	24366333	CARBON FILM, 1/6W 33K OHM J
R7776	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7777	24366333	CARBON FILM, 1/6W 33K OHM J
R7778	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7779	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R7780	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R7781	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R7782	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R7783	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R7784	24000368	METAL FILM, 1/4W 2.7K OHM F
R7786	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R7788	24366221	CARBON FILM, 1/6W 220 OHM J (43CVR9UR)
R7888	24366223	CARBON FILM, 1/6W 22K OHM J (50CVR9UR)
R7889	24366223	CARBON FILM, 1/6W 22K OHM J (50CVR9UR)
R7790	24366223	CARBON FILM, 1/6W 22K OHM J
R7791	24366103	CARBON FILM, 1/6W 10K OHM J
R7792	24366472	CARBON FILM, 1/6W 4.7K OHM J (43CVR9UR)
R7892	24366123	CARBON FILM, 1/6W 12K OHM J (50CVR9UR)
R7793	24011223	CHIP, METAL FILM, 1/20W 22K OHM J (43CVR9UR)
R7893	24366123	CARBON FILM, 1/6W 12K OHM J (50CVR9UR)
R7797	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7798	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7799	24366222	CARBON FILM, 1/6W 2.2K OHM J
R7836	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7837	24366470	CARBON FILM, 1/6W 47 OHM J
R7841	24366101	CARBON FILM, 1/6W 100 OHM J
R7842	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7843	24366471	CARBON FILM, 1/6W 470 OHM J
R7844	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7845	24366471	CARBON FILM, 1/6W 470 OHM J
R7846	24366103	CARBON FILM, 1/6W 10K OHM J
R7847	24366103	CARBON FILM, 1/6W 10K OHM J
R7848	24366222	CARBON FILM, 1/6W 2.2K OHM J
R7861	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7862	24366222	CARBON FILM, 1/6W 2.2K OHM J
R7864	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R7868	24011752	CHIP, METAL FILM, 1/20W 7.5K OHM J
R7872	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R7880	24366221	CARBON FILM, 1/6W 220 OHM J
R7881	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7882	24366103	CARBON FILM, 1/6W 10K OHM J

Location No.	Parts No.	Description
R7883	24366103	CARBON FILM, 1/6W 10K OHM J
R7884	24366103	CARBON FILM, 1/6W 10K OHM J
R7885	24366103	CARBON FILM, 1/6W 10K OHM J
R7886	24366104	CARBON FILM, 1/6W 100K OHM J
R7887	24366562	CARBON FILM, 1/6W 5.6K OHM J
R7888	24366333	CARBON FILM, 1/6W 33K OHM J
R7889	24366333	CARBON FILM, 1/6W 33K OHM J
R7890	24366471	CARBON FILM, 1/6W 470 OHM J
R7891	24366471	CARBON FILM, 1/6W 470 OHM J
R7892	24366223	CARBON FILM, 1/6W 22K OHM J
R7893	24366223	CARBON FILM, 1/6W 22K OHM J
R7904	24000635	METAL FILM, 1/4W 12K OHM F
R7906	24011752	CHIP, METAL FILM, 1/20W 7.5K OHM J
R7907	24366104	CARBON FILM, 1/6W 100K OHM J
R7908	24366222	CARBON FILM, 1/6W 2.2K OHM J
R7909	24366472	CARBON FILM, 1/6W 4.7K OHM J
R7910	24366222	CARBON FILM, 1/6W 2.2K OHM J
R7911	24366221	CARBON FILM, 1/6W 220 OHM J
R7912	24366221	CARBON FILM, 1/6W 220 OHM J
R7913	24366221	CARBON FILM, 1/6W 220 OHM J
R7914	24381182	OXIDE METAL FILM, 1/2W 1.8K OHM J
R9501	24366101	CARBON FILM, 1/6W 100 OHM J
R9503	24366681	CARBON FILM, 1/6W 680 OHM J
R9507	24366330	CARBON FILM, 1/6W 33 OHM J
R9607	24366101	CARBON FILM, 1/6W 100 OHM J
R9608	24366681	CARBON FILM, 1/6W 680 OHM J
R9620	24366330	CARBON FILM, 1/6W 33 OHM J
RA02	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA03	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA04	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA05	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA07	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA08	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA09	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA10	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RA11	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA12	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA13	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA14	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA15	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA16	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA17	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA18	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA19	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA21	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA22	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA26	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA27	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA29	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA30	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA31	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA32	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA33	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA34	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA35	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA37	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA38	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA40	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA41	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA42	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RA45	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RA51	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA58	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA59	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA60	24011470	CHIP, METAL FILM, 1/20W 47 OHM J
RA65	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA66	24011103	CHIP, METAL FILM, 1/20W 10K OHM J

Location No.	Parts No.	Description
RA67	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA70	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RA71	24011683	CHIP, METAL FILM, 1/20W 68K OHM J
RA72	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA72	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RA73	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA75	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RA76	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA76	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA77	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RA78	24011683	CHIP, METAL FILM, 1/20W 68K OHM J
RA82	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA83	24011105	CHIP, METAL FILM, 1/20W 1M OHM J
RA84	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA85	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
RA86	24011470	CHIP, METAL FILM, 1/20W 47 OHM J
RA87	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA88	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA93	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA95	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RA100	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA122	24011392	CHIP, METAL FILM, 1/20W 3.9K OHM J
RA123	24011392	CHIP, METAL FILM, 1/20W 3.9K OHM J
RA124	24011392	CHIP, METAL FILM, 1/20W 3.9K OHM J
RA125	24011221	CHIP, METAL FILM, 1/20W 220 OHM J
RA141	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RA240	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA501	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA531	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RA591	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB02	24366271	CARBON FILM, 1/6W 270 OHM J
RB03	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RB08	24366221	CARBON FILM, 1/6W 220 OHM J
RB09	24011470	CHIP, METAL FILM, 1/20W 47 OHM J
RB10	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RB10	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RB11	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB11	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RB12	24366471	CARBON FILM, 1/6W 470 OHM J
RB21	24366821	CARBON FILM, 1/6W 820 OHM J
RB22	24366821	CARBON FILM, 1/6W 820 OHM J
RB23	24366821	CARBON FILM, 1/6W 820 OHM J
RB24	24366821	CARBON FILM, 1/6W 820 OHM J
RB25	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RB26	24366821	CARBON FILM, 1/6W 820 OHM J
RB32	24011105	CHIP, METAL FILM, 1/20W 1M OHM J
RB33	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
RB34	24011392	CHIP, METAL FILM, 1/20W 3.9K OHM J
RB35	24011392	CHIP, METAL FILM, 1/20W 3.9K OHM J
RB43	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB44	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB45	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RB46	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB49	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RB81	24011122	CHIP, METAL FILM, 1/20W 1.2K OHM J
RB82	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
RB83	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
RB90	24011392	CHIP, METAL FILM, 1/20W 3.9K OHM J
RB91	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RB92	24011271	CHIP, METAL FILM, 1/20W 270 OHM J
RB93	24011271	CHIP, METAL FILM, 1/20W 270 OHM J
RB94	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RB95	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RB96	24011273	CHIP, METAL FILM, 1/20W 27K OHM J
RB97	24011273	CHIP, METAL FILM, 1/20W 27K OHM J
RB98	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC01	24011102	CHIP, METAL FILM, 1/20W 1K OHM J

Location No.	Parts No.	Description
RC02	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC03	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC04	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC05	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC06	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC07	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC08	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC09	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC10	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC60	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC61	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RD01	24366103	CARBON FILM, 1/6W 10K OHM J
RD02	24366103	CARBON FILM, 1/6W 10K OHM J
RD03	24366101	CARBON FILM, 1/6W 100 OHM J
RD04	24366101	CARBON FILM, 1/6W 100 OHM J
RD05	24366101	CARBON FILM, 1/6W 100 OHM J
RD06	24366472	CARBON FILM, 1/6W 4.7K OHM J
RD07	24366332	CARBON FILM, 1/6W 3.3K OHM J
RD09	24366104	CARBON FILM, 1/6W 100K OHM J
RD11	24366104	CARBON FILM, 1/6W 100K OHM J
RD12	24366101	CARBON FILM, 1/6W 100 OHM J
RD13	23316672	DIODE, ZENER, MTZJ5.6B
RD14	24366221	CARBON FILM, 1/6W 220 OHM J
RD15	23316672	DIODE, ZENER, MTZJ5.6B
RD16	24366123	CARBON FILM, 1/6W 12K OHM J
RD17	24366101	CARBON FILM, 1/6W 100 OHM J
RD18	24366103	CARBON FILM, 1/6W 10K OHM J
RD19	24366103	CARBON FILM, 1/6W 10K OHM J
RD21	24366332	CARBON FILM, 1/6W 3.3K OHM J
RJ09	24000445	CHIP JUMPER, 1608TYPE
RJ10	24000445	CHIP JUMPER, 1608TYPE
RJ11	24000445	CHIP JUMPER, 1608TYPE
RJ13	24000445	CHIP JUMPER, 1608TYPE
RJ15	24000445	CHIP JUMPER, 1608TYPE
RJ16	24000445	CHIP JUMPER, 1608TYPE
RR61	24011432	CHIP, METAL FILM, 1/20W 4.3K OHM J
RR63	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RR64	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RR65	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR68	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RR69	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RR70	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR74	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR75	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR85	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR86	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RR87	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RR88	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
RS01	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS02	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS03	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS04	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS05	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS06	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS07	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS08	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS09	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS10	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS11	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS12	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS19	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS20	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS21	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RS22	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RS25	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS26	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS29	24011102	CHIP, METAL FILM, 1/20W 1K OHM J

Location No.	Parts No.	Description
RS30	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RS31	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS32	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS33	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS34	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS40	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RS41	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RS42	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS43	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS49	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RS50	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RS53	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS54	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS55	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS56	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RT01	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT02	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT03	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT04	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT05	24011100	CHIP, METAL FILM, 1/20W 10 OHM J
RT06	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT07	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT08	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT09	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT10	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT11	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT12	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT13	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT14	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT15	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT16	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT17	24011561	CHIP, METAL FILM, 1/20W 560 OHM J
RT18	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RT19	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RT20	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT21	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT22	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT23	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RT24	24000594	CHIP, 1/16W 12K OHM F
RT26	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RT27	24000594	CHIP, 1/16W 12K OHM F
RT28	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT29	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT30	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT31	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RT32	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RT33	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RT34	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT35	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT36	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT37	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT38	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
RT39	24011561	CHIP, METAL FILM, 1/20W 560 OHM J
RT40	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
RT42	24011470	CHIP, METAL FILM, 1/20W 47 OHM J
RT43	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
RV03	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV04	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV05	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RV06	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV07	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV08	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV09	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV10	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV11	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV12	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RV13	24011473	CHIP, METAL FILM, 1/20W 47K OHM J

Location No.	Parts No.	Description
RV14	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV15	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV20	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV21	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV22	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV25	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RV31	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV32	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV33	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV35	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RV37	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV38	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV39	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV40	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV42	24011391	CHIP, METAL FILM, 1/20W 390 OHM J
RV43	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV45	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV46	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV47	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV48	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV49	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV65	24552101	OXIDE METAL FILM, 1/2W 100 OHM J
RV66	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV67	24366331	CARBON FILM, 1/6W 330 OHM J
RV68	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV69	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV70	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV71	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV72	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV73	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV74	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RV81	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV87	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV88	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV89	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV90	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV91	24011750	CHIP, METAL FILM, 1/20W 75 OHM J

COILS & TRANSFORMERS

L101	23248296	COIL, CHOKE, TLN3278GH
L102	23238506	COIL, PEAKING, TRF4229AJ
L103	23238506	COIL, PEAKING, TRF4229AJ
L230	23289100	COIL, PEAKING, TRF4100AF
L302	23248073	COIL, CHOKE, TLN3299D
L303	23248073	COIL, CHOKE, TLN3299D
L304	23103145	FERRITE CHOKE, TEM2011AA
L310	23237975	COIL, PEAKING, TRF4101AC
L311	23237975	COIL, PEAKING, TRF4101AC
L401	23289560	COIL, PEAKING, TRF4560AF
L402	23248248	COIL, CHOKE, TLN3500AH
L403	23103145	FERRITE CHOKE, TEM2011AA
L406	23248191	COIL, CHOKE, TLN3351AD
L407	23103248	FERRITR CHOKE, TEM2014AA
L408	23103248	FERRITR CHOKE, TEM2014AA
L409	23237975	COIL, PEAKING, TRF4101AC
L441	23233050	COIL, HORIZ LINEARITY, TLN2215AT
L442	23248259	COIL, CHOKE, TLN3505AF (43CVR9UR)
⚠ L462	23231325	COIL, DEFLECTION YOKE, TDY707PS
⚠ L463	23231325	COIL, DEFLECTION YOKE, TDY707PS
⚠ L464	23231325	COIL, DEFLECTION YOKE, TDY707PS
L472	23102461	VM COIL, 29.1VM5T3PLEAD, MAG-1103
L473	23102461	VM COIL, 29.1VM5T3PLEAD, MAG-1103
L474	23102461	VM COIL, 29.1VM5T3PLEAD, MAG-1103
L501	23289844	COIL, PEAKING, TRF4470AT
L502	23289844	COIL, PEAKING, TRF4470AT
L803	23103145	FERRITE CHOKE, TEM2011AA
L804	23103145	FERRITE CHOKE, TEM2011AA

Location No.	Parts No.	Description
L805	23103145	FERRITE CHOKE, TEM2011AA
L840	23248087	COIL, CHOKE, TLN3312D
L860	23280025	COIL, PEAKING, TRF4331AZ
L870	23103145	FERRITE CHOKE, TEM2011AA
L871	23103145	FERRITE CHOKE, TEM2011AA
L872	23103145	FERRITE CHOKE, TEM2011AA
L873	23103145	FERRITE CHOKE, TEM2011AA
L874	23103145	FERRITE CHOKE, TEM2011AA
L875	23103145	FERRITE CHOKE, TEM2011AA
L876	23103145	FERRITE CHOKE, TEM2011AA
L877	23103145	FERRITE CHOKE, TEM2011AA
L878	23103145	FERRITE CHOKE, TEM2011AA
L879	23103145	FERRITE CHOKE, TEM2011AA
L880	23103145	FERRITE CHOKE, TEM2011AA
L885	23248073	COIL, CHOKE, TLN3299D
L886	23280020	COIL, PEAKING, TRF4470AZ
L887	23280020	COIL, PEAKING, TRF4470AZ
L888	23248247	COIL, CHOKE, TLN3499AH
L889	23248247	COIL, CHOKE, TLN3499AH
L890	23248247	COIL, CHOKE, TLN3499AH
L891	23248247	COIL, CHOKE, TLN3499AH
L902	23289159	COIL, PEAKING, TRF41R5AF
L904	23289120	COIL, PEAKING, TRF4120AF
L905	23289689	COIL, PEAKING, TRF46R8AF
L911	23289100	COIL, PEAKING, TRF4100AF
L913	23289159	COIL, PEAKING, TRF41R5AF
L915	23289689	COIL, PEAKING, TRF46R8AF
L916	23289120	COIL, PEAKING, TRF4120AF
L921	23289100	COIL, PEAKING, TRF4100AF
L923	23289159	COIL, PEAKING, TRF41R5AF
L924	23289120	COIL, PEAKING, TRF4120AF
L925	23289689	COIL, PEAKING, TRF46R8AF
L931	23289100	COIL, PEAKING, TRF4100AF
L4401	23289101	COIL, PEAKING, TRF4101AF
L4420	23289470	COIL, PEAKING, TRF4470AF
L4441	23248326	COIL, CHOKE, TLN3530AH
L7001	23289840	COIL, PEAKING, TRF4100AT
L7002	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7003	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7004	23261974	COIL, FERRITE BEAD, HC5-035
L7101	23289840	COIL, PEAKING, TRF4100AT
L7102	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7103	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7104	23261974	COIL, FERRITE BEAD, HC5-035
L7201	23289840	COIL, PEAKING, TRF4100AT
L7202	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7203	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7204	23261974	COIL, FERRITE BEAD, HC5-035
L7701	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7702	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7703	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7704	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7705	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7706	23103894	FILTER, FERRITE BEAD, TEM2011AW
L7708	23103145	FERRITE CHOKE, TEM2011AA
L7709	23103145	FERRITE CHOKE, TEM2011AA
L7710	23248195	COIL, CHOKE, TLN3441AT
L7711	23248195	COIL, CHOKE, TLN3441AT
L7712	23248031	COIL, CHOKE, TLN3274D
L7712	23248247	COIL, CHOKE, TLN3499AH
L7713	23248031	COIL, CHOKE, TLN3274D
L7713	23248247	COIL, CHOKE, TLN3499AH
LA01	23289840	COIL, PEAKING, TRF4100AT
LC14	23103146	EMI FILTER, TEM2030AA
LC15	23103146	EMI FILTER, TEM2030AA
LC16	23103146	EMI FILTER, TEM2030AA

Location No.	Parts No.	Description
LC17	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
LR01	23103146	EMI FILTER, TEM2030AA
LR02	23103146	EMI FILTER, TEM2030AA
LR21	23103146	EMI FILTER, TEM2030AA
LR22	23103146	EMI FILTER, TEM2030AA
LR23	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
LR24	23103146	EMI FILTER, TEM2030AA
LR24	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
LR25	23103146	EMI FILTER, TEM2030AA
LR25	23103146	EMI FILTER, TEM2030AA
LR26	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
LR27	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
LR28	23103146	EMI FILTER, TEM2030AA
LT01	23103828	INDUCTOR, BEAD, TEM2121M
LT02	23103828	INDUCTOR, BEAD, TEM2121M
LT03	23103828	INDUCTOR, BEAD, TEM2121M
LT04	23103828	INDUCTOR, BEAD, TEM2121M
LT05	23103828	INDUCTOR, BEAD, TEM2121M
LT06	23289151	COIL, PEAKING, TRF4151AF
LT07	23103828	INDUCTOR, BEAD, TEM2121M
LT08	23103828	INDUCTOR, BEAD, TEM2121M
LT09	23103828	INDUCTOR, BEAD, TEM2121M
LT11	23103828	INDUCTOR, BEAD, TEM2121M
LV02	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
LV03	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
LV09	23289840	COIL, PEAKING, TRF4100AT
LV10	23289840	COIL, PEAKING, TRF4100AT
LV11	23103159	FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A
T400	23224386	TRANSFORMER, FOCUS, TLN2220AH
T401	23224371	TRANSFORMER, HORIZ DRIVE, TLN1080AH
T461A	23192960	ANODE CAP ASSY, TCC5604AT
T461B	23960136	ADHESIVE, SILICONE, TSE3843-W
⚠ T461Z	23236787	TRANSFORMER, HORIZ OUTPUT, SERVICE, TFB3092ZD
⚠ T801	23211698	COIL, LINE FILTER, TRF3218AK
⚠ T802	23211759	COIL, LINE FILTER, TRF3239AF
⚠ T803	23211759	COIL, LINE FILTER, TRF3239AF
⚠ T860	23217599	TRANSFORMER, CONVERTER, TPW3517AH
⚠ T862	23217612	TRANSFORMER, CONVERTER, TPW3516AF
SEMICONDUCTORS		
Q201	23314965	TRANSISTOR, KTC3198 Y
Q202	23314962	TRANSISTOR, KTA1266 Y
Q203	23314962	TRANSISTOR, KTA1266 Y
Q204	23314962	TRANSISTOR, KTA1266 Y
Q205	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q206	23205112	TRANSISTOR, 2SA1980UF-Y(
Q207	23205112	TRANSISTOR, 2SA1980UF-Y(
Q208	23205112	TRANSISTOR, 2SA1980UF-Y(
Q230	23314965	TRANSISTOR, KTC3198 Y
Q241	23114756	TRANSISTOR, 2SC2482
Q290	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q301	23319787	IC, LA7833S
Q301B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q302	23905266	IC, TA8859CP
Q304	70119059	IC, OP AMP, TA75902P(J)
Q305	23205112	TRANSISTOR, 2SA1980UF-Y(
Q306	70119059	IC, OP AMP, TA75902P(J)

Location No.	Parts No.	Description
Q307	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q350	23319203	IC, MC7812CT
Q350B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q370	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q371	23205112	TRANSISTOR, 2SA1980UF-Y(
Q372	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q373	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q381	23205014	TRANSISTOR, 2SC4667-O
Q382	23205014	TRANSISTOR, 2SC4667-O
Q400	23205079	TRANSISTOR, 2SC4686A
Q402	23205166	TRANSISTOR, FET, 2SK2962
Q404	23205149	TRANSISTOR, 2SC5859(FA)
Q404B	23850638	INSULATOR, TRANSISTOR, AC263(NO SERVICE PART)
Q404D	72471082	SCREW, 3X10MM
Q405	23314962	TRANSISTOR, KTA1266 Y
Q406	23314965	TRANSISTOR, KTC3198 Y
Q420	23114756	TRANSISTOR, 2SC2482
Q425	23205031	TRANSISTOR, FET, 2SK2920
Q426	23119747	IC, OPE AMP, TA75358P
Q427	70128158	IC, BA10393
Q428	23314965	TRANSISTOR, KTC3198 Y
Q502	23000821	IC, TDA9178TN1
Q503	23205112	TRANSISTOR, 2SA1980UF-Y(
Q504	23205112	TRANSISTOR, 2SA1980UF-Y(
Q505	23205112	TRANSISTOR, 2SA1980UF-Y(
Q506	23205112	TRANSISTOR, 2SA1980UF-Y(
Q507	23205112	TRANSISTOR, 2SA1980UF-Y(
Q510	23009287	IC, TA1360ANG
Q601	23009485	IC, TA8258H(GR)
Q601B	70391356	SCREW, BITTB3X10 SZN
Q611	70114396	TRANSISTOR, 2SC3326B
Q612	70114396	TRANSISTOR, 2SC3326B
Q613	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q614	23114499	TRANSISTOR, RN1404
Q615	23205112	TRANSISTOR, 2SA1980UF-Y(
Q616	23314289	TRANSISTOR, 2SA1586-Y
Q617	23906596	IC, BA4558
Q650	23906596	IC, BA4558
Q651	70114396	TRANSISTOR, 2SC3326B
Q652	70114396	TRANSISTOR, 2SC3326B
Q653	23205123	TRANSISTOR, 2SA933ASQ
Q654	23205123	TRANSISTOR, 2SA933ASQ
Q701	23205075	TRANSISTOR, 2SA1930
Q701B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q702	23205076	TRANSISTOR, 2SC5171
Q702B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q711	23205075	TRANSISTOR, 2SA1930
Q711B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q712	23205076	TRANSISTOR, 2SC5171
Q712B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q721	23205075	TRANSISTOR, 2SA1930
Q721B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q722	23205076	TRANSISTOR, 2SC5171
Q722B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q751	23905094	IC, STK392-110
Q752	23905094	IC, STK392-110
Q764	23319372	IC, TC74HC14AP
Q765	23314965	TRANSISTOR, KTC3198 Y
Q766	23314965	TRANSISTOR, KTC3198 Y
Q767	23000044	IC, TC4066BP(N)
Q768	23314965	TRANSISTOR, KTC3198 Y
Q772	23314962	TRANSISTOR, KTA1266 Y
Q773	23314965	TRANSISTOR, KTC3198 Y
Q776	23314965	TRANSISTOR, KTC3198 Y
Q777	23314962	TRANSISTOR, KTA1266 Y
Q778	23314965	TRANSISTOR, KTC3198 Y
Q779	23314965	TRANSISTOR, KTC3198 Y
Q780	23314962	TRANSISTOR, KTA1266 Y
Q781	23314965	TRANSISTOR, KTC3198 Y
Q782	23319894	IC, NJM79M05FA
Q783	23205037	TRANSISTOR, 2SJ512
Q783B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q784	23904268	IC, PQ05RR1
Q784B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q788	23314965	TRANSISTOR, KTC3198 Y
Q792	23319666	IC, TC74HC123AP(NEW)
Q793	23314917	TRANSISTOR, 2SK2003-01MR
Q796	23314965	TRANSISTOR, KTC3198 Y
Q797	70119306	IC, TA75393P
Q798	23000044	IC, TC4066BP(N)
Q801	23135028	IC, STR-Z4479
Q830	23000804	IC, SI-3090J(LF1101)
Q830B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q831	23319941	IC, SI-3050C
Q831B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q832	23319941	IC, SI-3050C
Q832B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q835	23114733	TRANSISTOR, 2SC2655-Y
Q836	23114733	TRANSISTOR, 2SC2655-Y
Q840	23135004	IC, STR83145A(LF501)
Q840B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q841	23114528	TRANSISTOR, 2SC1740S
Q842	23114530	TRANSISTOR, 2SA933S
Q851	23314965	TRANSISTOR, KTC3198 Y
Q852	23314965	TRANSISTOR, KTC3198 Y
Q853	23314965	TRANSISTOR, KTC3198 Y
Q860	23135038	IC, MIP2900MPSCF
Q861	23000140	IC, MM1437AS
⚠ Q862	23000823	IC, PHOTO COUPLER, TLP421F(GR)
⚠ Q863	23000823	IC, PHOTO COUPLER, TLP421F(GR)
Q901	23205159	TRANSISTOR, 2SC3942
Q902	23205165	TRANSISTOR, 2SC3950E
Q904	23205158	TRANSISTOR, 2SC3790E
Q905	23205156	TRANSISTOR, 2SA1480E
Q905C	23960136	ADHESIVE, SILICONE, TSE3843-W
Q911	23205159	TRANSISTOR, 2SC3942
Q912	23205165	TRANSISTOR, 2SC3950E
Q913	23314962	TRANSISTOR, KTA1266 Y
Q914	23205158	TRANSISTOR, 2SC3790E
Q915	23205156	TRANSISTOR, 2SA1480E
Q915C	23960136	ADHESIVE, SILICONE, TSE3843-W
Q921	23205159	TRANSISTOR, 2SC3942
Q922	23205165	TRANSISTOR, 2SC3950E
Q924	23205158	TRANSISTOR, 2SC3790E
Q925	23205156	TRANSISTOR, 2SA1480E
Q925C	23960136	ADHESIVE, SILICONE, TSE3843-W
Q962	23314962	TRANSISTOR, KTA1266 Y
Q973	23314962	TRANSISTOR, KTA1266 Y
Q3103	23205112	TRANSISTOR, 2SA1980UF-Y(
Q3500	23904780	IC, JLC1562BN

Location No.	Parts No.	Description
Q3511	23205116	TRANSISTOR, 2SC5343UF-Y(B
Q4420	23000370	IC, TA1318N
Q4430	23114733	TRANSISTOR, 2SC2655-Y
Q4451	23205068	TRANSISTOR, 2SC5343S-Y
Q4452	23114497	TRANSISTOR, RN1406
Q4453	23114497	TRANSISTOR, RN1406
Q4454	23114497	TRANSISTOR, RN1406
Q4455	23205068	TRANSISTOR, 2SC5343S-Y
Q7001	23314476	TRANSISTOR, 2SC2712-GR
Q7002	23314476	TRANSISTOR, 2SC2712-GR
Q7003	70114402	TRANSISTOR, 2SC3437-Y
Q7004	23114432	TRANSISTOR, 2SC1815-GR
Q7005	23314476	TRANSISTOR, 2SC2712-GR
Q7006	23314476	TRANSISTOR, 2SC2712-GR
Q7007	23314174	TRANSISTOR, 2SA1162-GR
Q7008	23314476	TRANSISTOR, 2SC2712-GR
Q7009	23314174	TRANSISTOR, 2SA1162-GR
Q7101	23314476	TRANSISTOR, 2SC2712-GR
Q7102	23314476	TRANSISTOR, 2SC2712-GR
Q7103	70114402	TRANSISTOR, 2SC3437-Y
Q7104	23114432	TRANSISTOR, 2SC1815-GR
Q7105	23314476	TRANSISTOR, 2SC2712-GR
Q7106	23314476	TRANSISTOR, 2SC2712-GR
Q7107	23314174	TRANSISTOR, 2SA1162-GR
Q7108	23314476	TRANSISTOR, 2SC2712-GR
Q7109	23314174	TRANSISTOR, 2SA1162-GR
Q7201	23314476	TRANSISTOR, 2SC2712-GR
Q7202	23314476	TRANSISTOR, 2SC2712-GR
Q7203	70114402	TRANSISTOR, 2SC3437-Y
Q7204	23114432	TRANSISTOR, 2SC1815-GR
Q7205	23314476	TRANSISTOR, 2SC2712-GR
Q7206	23314476	TRANSISTOR, 2SC2712-GR
Q7207	23314174	TRANSISTOR, 2SA1162-GR
Q7208	23314476	TRANSISTOR, 2SC2712-GR
Q7209	23314174	TRANSISTOR, 2SA1162-GR
Q7701	23314965	TRANSISTOR, KTC3198 Y
Q7767	23205112	TRANSISTOR, 2SA1980UF-Y(
QA01	23009386	IC, 8BIT MICRO COMPUTER 64PIN, CXP750010-305S
QA02	23009330	IC, AT24C64-10PI-2.7
QA03	23906946	IC, CM0016AD
QA05	23205014	TRANSISTOR, 2SC4667-O
QA06	23205116	TRANSISTOR, 2SC5343UF-Y(B
QB01	23205112	TRANSISTOR, 2SA1980UF-Y(
QB02	23205112	TRANSISTOR, 2SA1980UF-Y(
QB03	23114459	TRANSISTOR, RN1205
QB06	23205112	TRANSISTOR, 2SA1980UF-Y(
QB42	23205112	TRANSISTOR, 2SA1980UF-Y(
QB43	23205116	TRANSISTOR, 2SC5343UF-Y(B
QB81	70114396	TRANSISTOR, 2SC3326B
QB82	70114396	TRANSISTOR, 2SC3326B
QB83	23205112	TRANSISTOR, 2SA1980UF-Y(
QB92	23205116	TRANSISTOR, 2SC5343UF-Y(B
QB93	23205112	TRANSISTOR, 2SA1980UF-Y(
QB94	23205112	TRANSISTOR, 2SA1980UF-Y(
QB95	23205112	TRANSISTOR, 2SA1980UF-Y(
QB96	23205112	TRANSISTOR, 2SA1980UF-Y(
QD01	23009142	IC, NJM1136D
QR35	23205116	TRANSISTOR, 2SC5343UF-Y(B
QR36	23205116	TRANSISTOR, 2SC5343UF-Y(B
QR38	23205116	TRANSISTOR, 2SC5343UF-Y(B
QR40	23205116	TRANSISTOR, 2SC5343UF-Y(B
QS01	23205116	TRANSISTOR, 2SC5343UF-Y(B
QS02	23205116	TRANSISTOR, 2SC5343UF-Y(B
QS03	23205116	TRANSISTOR, 2SC5343UF-Y(B
QS04	23205116	TRANSISTOR, 2SC5343UF-Y(B
QS05	70114396	TRANSISTOR, 2SC3326B

Location No.	Parts No.	Description
QS06	70114396	TRANSISTOR, 2SC3326B
QS07	70114396	TRANSISTOR, 2SC3326B
QS08	70114396	TRANSISTOR, 2SC3326B
QS09	23114493	TRANSISTOR, RN2404
QT01	23009168	IC, SAA5695HL/M0/0659
QT02	23205006	TRANSISTOR, KTC4075Y-RTK
QT03	70114402	TRANSISTOR, 2SC3437-Y
QT04	23205005	TRANSISTOR, KTA2014Y-RTK
QT05	23205006	TRANSISTOR, KTC4075Y-RTK
QT06	23000283	IC, R1121N
QT08	23205006	TRANSISTOR, KTC4075Y-RTK
QT10	23205006	TRANSISTOR, KTC4075Y-RTK
QT11	23906367	IC, PST9146NL
QT12	23205005	TRANSISTOR, KTA2014Y-RTK
QT13	23205005	TRANSISTOR, KTA2014Y-RTK
QT14	23205005	TRANSISTOR, KTA2014Y-RTK
QT15	23205005	TRANSISTOR, KTA2014Y-RTK
QV01	23906887	IC, CXA2069Q
QV02	23905590	IC, M52055FP
QV03	23000359	IC, MM1111XF
QV04	23205116	TRANSISTOR, 2SC5343UF-Y(B
QV05	23205116	TRANSISTOR, 2SC5343UF-Y(B
QV12	23114433	TRANSISTOR, 2SC1815-Y
QV13	23205112	TRANSISTOR, 2SA1980UF-Y(
QV14	23205112	TRANSISTOR, 2SA1980UF-Y(
QV15	23205112	TRANSISTOR, 2SA1980UF-Y(
QV16	23205112	TRANSISTOR, 2SA1980UF-Y(
QV17	23205112	TRANSISTOR, 2SA1980UF-Y(
QV18	23205112	TRANSISTOR, 2SA1980UF-Y(
D101	23316755	DIODE, ZENER, MTZJ33C
D210	23118621	DIODE, ZENER, RD10ESA B3
D211	23118621	DIODE, ZENER, RD10ESA B3
D212	23118621	DIODE, ZENER, RD10ESA B3
D216	23357172	DIODE, ZENER, UDZS10B
D217	23357172	DIODE, ZENER, UDZS10B
D218	23357172	DIODE, ZENER, UDZS10B
D219	23357172	DIODE, ZENER, UDZS10B
D220	23357172	DIODE, ZENER, UDZS10B
D221	23357172	DIODE, ZENER, UDZS10B
D222	23357172	DIODE, ZENER, UDZS10B
D223	23357172	DIODE, ZENER, UDZS10B
D230	23118041	DIODE, MA111
D231	23316792	DIODE, SC215
D301	23357165	DIODE, ZENER, UDZS7.5B
D302	23357366	DIODE, FR105-B5
D303	23118041	DIODE, MA111
D304	23316794	DIODE, SC570A
D305	23357365	DIODE, 1N4004A-B5
D306	23357365	DIODE, 1N4004A-B5
D308	23118041	DIODE, MA111
D350	23316399	DIODE, EL1Z
D370	23118041	DIODE, MA111
D371	23357170	DIODE, ZENER, UDZS8.2B
D401	23118094	DIODE, EU2A
D402	23357366	DIODE, FR105-B5
D404	23316254	DIODE, ERC06-15
D406	23115910	DIODE, S5295G
D411	23118499	DIODE, ZENER, RD18ESA B2
D412	23118707	DIODE, RP-1H
D413	23118707	DIODE, RP-1H
D414	23357366	DIODE, FR105-B5
D415	23357366	DIODE, FR105-B5
D420	23118859	DIODE, 1SS133
D421	23357366	DIODE, FR105-B5
D425	23118094	DIODE, EU2A
D426	23118499	DIODE, ZENER, RD18ESA B2
D461	23224366	DIODE, FMQ-3GU

Location No.	Parts No.	Description
D473	23118537	DIODE, ZENER, RD6.2ES B3
D502	23118041	DIODE, MA111
D505	23118859	DIODE, 1SS133
D520	23118641	DIODE, ZENER, RD2.0ESA B2
D580	23115910	DIODE, S5295G
D601	23118041	DIODE, MA111
D602	23118041	DIODE, MA111
D603	23118041	DIODE, MA111
D604	23118041	DIODE, MA111
D605	23118041	DIODE, MA111
D608	23118041	DIODE, MA111
D609	23118041	DIODE, MA111
D610	23118041	DIODE, MA111
D611	23118041	DIODE, MA111
D651	23118041	DIODE, MA111
D652	23118041	DIODE, MA111
D653	23118041	DIODE, MA111
D654	23118041	DIODE, MA111
D799	23118041	DIODE, MA111
D803	23316787	DIODE, D15XB60H
D803B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D805	23118518	DIODE, ZENER, RD9.1ES
D806	23118615	DIODE, ZENER, RD27ES B3
D809	23118603	DIODE, ZENER, RD36ESA B3
D810	23118615	DIODE, ZENER, RD27ES B3
D811	23118057	DIODE, AG01A
D812	23118516	DI0DE, ZENER, RD9.1ES B3
D813	23118060	DIODE, AL01Z
D816	24000656	VARISTOR, TNR15G471K
D835	23316721	DIODE, ZENER, MTZJ13A
D838	23115532	DIODE, ERB12-01
D839	23316691	DIODE, ZENER, MTZJ10C
D840	23115338	DIODE, 1S1835
D841	23118525	DIODE, ZENER, RD6.8ES B3
D842	23118933	THYRISTOR, SF5J42(N)
D843	23118536	DIODE, ZENER, RD4.7ES B1
D844	23115338	DIODE, 1S1835
D850	23357012	DIODE, 1SS244
D851	23118537	DIODE, ZENER, RD6.2ES B3
D852	23118859	DIODE, 1SS133
D854	23118859	DIODE, 1SS133
D860	23357207	DIODE, LN1WBA60
D861	23118094	DIODE, EU2A
D862	23118529	DIODE, ZENER, RD5.6ES B2
D863	23118537	DIODE, ZENER, RD6.2ES B3
D864	23118536	DIODE, ZENER, RD4.7ES B1
D865	23118536	DIODE, ZENER, RD4.7ES B1
D866	23118529	DIODE, ZENER, RD5.6ES B2
D867	23118623	DI0DE, ZENER, RD10ES B1
D868	23118623	DI0DE, ZENER, RD10ES B1
D871	23118859	DIODE, 1SS133
D879	23316184	DIODE, FML-G12S
D879B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D880	23316184	DIODE, FML-G12S
D880B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D881	23357215	DIODE, D4SBS6
D881B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D882	23316714	DIODE, RL2Z
D883	23316714	DIODE, RL2Z
D884	23357217	DIODE, D4SBL40
D884B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D885	23357216	DIODE, D4SBL20U

Location No.	Parts No.	Description
D901	23118859	DIODE, 1SS133
D902	23118859	DIODE, 1SS133
D903	23316684	DIODE, ZENER, MTZJ8.2B
D904	23118859	DIODE, 1SS133
D905	23118859	DIODE, 1SS133
D906	23357012	DIODE, 1SS244
D907	23357012	DIODE, 1SS244
D908	23357012	DIODE, 1SS244
D909	23357012	DIODE, 1SS244
D910	23316684	DIODE, ZENER, MTZJ8.2B
D911	23118859	DIODE, 1SS133
D912	23118859	DIODE, 1SS133
D913	23115337	DIODE, 1S1834
D914	23118859	DIODE, 1SS133
D915	23118859	DIODE, 1SS133
D916	23357012	DIODE, 1SS244
D917	23357012	DIODE, 1SS244
D918	23357012	DIODE, 1SS244
D919	23357012	DIODE, 1SS244
D921	23118859	DIODE, 1SS133
D922	23118859	DIODE, 1SS133
D923	23316684	DIODE, ZENER, MTZJ8.2B
D924	23118859	DIODE, 1SS133
D925	23118859	DIODE, 1SS133
D926	23357012	DIODE, 1SS244
D927	23357012	DIODE, 1SS244
D928	23357012	DIODE, 1SS244
D929	23357012	DIODE, 1SS244
D936	23115337	DIODE, 1S1834
D967	23115337	DIODE, 1S1834
D4401	23118041	DIODE, MA111
D4402	23118041	DIODE, MA111
D4430	23115532	DIODE, ERB12-01
D4431	23316715	DIODE, ZENER, MTZJ11A
D4451	23115532	DIODE, ERB12-01
D4452	23357170	DIODE, ZENER, UDZS8.2B
D4453	23118041	DIODE, MA111
D4454	23118041	DIODE, MA111
D7001	23118859	DIODE, 1SS133
D7002	23118859	DIODE, 1SS133
D7101	23118859	DIODE, 1SS133
D7102	23118859	DIODE, 1SS133
D7201	23118859	DIODE, 1SS133
D7202	23118859	DIODE, 1SS133
D7702	23118859	DIODE, 1SS133
D7703	23316678	DIODE, ZENER, MTZJ6.8B
D7705	23118041	DIODE, MA111
D7706	23118041	DIODE, MA111
D7707	23118041	DIODE, MA111
D7708	23118041	DIODE, MA111
D7709	23118538	DIODE, ZENER, RD6.2ESA B2
D7715	23118859	DIODE, 1SS133
D7716	23118859	DIODE, 1SS133
D7717	23118538	DIODE, ZENER, RD6.2ESA B2
D7718	23118538	DIODE, ZENER, RD6.2ESA B2
D7719	23118538	DIODE, ZENER, RD6.2ESA B2
D7729	23316738	DIODE, ZENER, MTZJ22B
D7730	23118538	DIODE, ZENER, RD6.2ESA B2
D7731	23118538	DIODE, ZENER, RD6.2ESA B2
D7733	23118499	DIODE, ZENER, RD18ESA B2
D7734	23118499	DIODE, ZENER, RD18ESA B2
D7765	23118041	DIODE, MA111
D7766	23118041	DIODE, MA111
D7767	23118041	DIODE, MA111
D7806	23118859	DIODE, 1SS133
D7808	23316714	DIODE, RL2Z
D7809	23118859	DIODE, 1SS133

Location No.	Parts No.	Description
D7810	23316402	DIODE, RL4Z
DA05	23118041	DIODE, MA111
DA42	23316673	DIODE, ZENER, MTZJ5.6C
DA89	23118538	DIODE, ZENER, RD6.2ESA B2
DB01	23358541	DIODE, LED, 4343VRT
DB02	23358563	DIODE, LED, SLR-56MC3FPQR
DB03	23358522	DIODE, LED, SIR-56SB3F
DB05	23358569	DIODE, LED, LAMP BLUE, SELU5E20C
DB06	23358569	DIODE, LED, LAMP BLUE, SELU5E20C
DB07	23358569	DIODE, LED, LAMP BLUE, SELU5E20C
DB08	23358569	DIODE, LED, LAMP BLUE, SELU5E20C
DB09	23358569	DIODE, LED, LAMP BLUE, SELU5E20C
DB10	23316669	DIODE, ZENER, MTZJ5.1B
DB20	23316691	DIODE, ZENER, MTZJ10C
DB21	23316691	DIODE, ZENER, MTZJ10C
DR61	23118041	DIODE, MA111
DR62	23118041	DIODE, MA111
DR63	23118041	DIODE, MA111
MISCELLANEOUS		
B107	23711305	SCREW, 3X4.5MM
B224	23035412	SCREW, BTB4X12 SZN
B225	23035412	SCREW, BTB4X12 SZN
B230	23037312	SCREW, BTBW3X12SZN
B233	23035412	SCREW, BTB4X12 SZN
B234	23030937	SCREW, 3X12
B412	23845834	LEAD CLAMPER
B472	23037312	SCREW, BTBW3X12SZN
B472	23037312	SCREW, BTBW3X12SZN
BB21A	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
BB21B	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB22A	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
BB22B	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB23A	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
BB23B	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB24A	23903022	CONNECTOR, BASE B-B 8P 2.5 JST
BB24B	23903022	CONNECTOR, BASE B-B 8P 2.5 JST
BB24C	23368627	CONNECTOR, BRIDGE B-B 8P 2.5JST 08TM-2.5FJ-E
BB26A	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
BB26B	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB80A	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
BB80B	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB82A	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
BB82B	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB85A	23903022	CONNECTOR, BASE B-B 8P 2.5 JST
BB85B	23903022	CONNECTOR, BASE B-B 8P 2.5 JST
BB85C	23368627	CONNECTOR, BRIDGE B-B 8P 2.5JST 08TM-2.5FJ-E
E936	23710134	SCREW, PP4X0.7X8 SBN
E945	23710134	SCREW, PP4X0.7X8 SBN
E957	23710134	SCREW, PP4X0.7X8 SBN
E966	23960136	ADHESIVE, SILICONE, TSE3843-W
E976	23960136	ADHESIVE, SILICONE, TSE3843-W
E986	23960136	ADHESIVE, SILICONE, TSE3843-W
⚠ F801	23144458	FUSE, 5.0A 250V
F801A	23165433	FUSE HOLDER, 5.2 SOC
F801B	23165433	FUSE HOLDER, 5.2 SOC
G230	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
G615	23238714	COIL, PEAKING, TRF4100AJ
G616	23238714	COIL, PEAKING, TRF4100AJ
GJ01	24000445	CHIP JUMPER, 1608TYPE
GJ01	24000445	CHIP JUMPER, 1608TYPE
GJ02	24000445	CHIP JUMPER, 1608TYPE
GJ02	24000445	CHIP JUMPER, 1608TYPE
GJ03	24000445	CHIP JUMPER, 1608TYPE
GJ04	24000445	CHIP JUMPER, 1608TYPE

Location No.	Parts No.	Description
GJ04	24000445	CHIP JUMPER, 1608TYPE
GJ05	24000445	CHIP JUMPER, 1608TYPE
GJ35	24000445	CHIP JUMPER, 1608TYPE
GJ36	24000445	CHIP JUMPER, 1608TYPE
GJ37	24000445	CHIP JUMPER, 1608TYPE
GJ40	24814103	CERAMIC CHIP, 50V F 0.01UF Z
GJ41	24814103	CERAMIC CHIP, 50V F 0.01UF Z
GJ72	24000445	CHIP JUMPER, 1608TYPE
GJ77	24000445	CHIP JUMPER, 1608TYPE
GJ79	24000445	CHIP JUMPER, 1608TYPE
GJ80	24000824	CHIP JUMPER, 2125TYPE
GJ81	24000824	CHIP JUMPER, 2125TYPE
GJ82	24000824	CHIP JUMPER, 2125TYPE
GJ521	24000445	CHIP JUMPER, 1608TYPE
GJ525	24000445	CHIP JUMPER, 1608TYPE
GJ526	24000445	CHIP JUMPER, 1608TYPE
GJ610	24000445	CHIP JUMPER, 1608TYPE
GT03	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
GT04	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
GT05	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
GT08	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
KB01	23000852	IC, REMOTE PHOTO RECEIVER, PIC-37043TE2
N722	23969684	TAPE, GLASS-CLOTH, W/ADHESIVE W=90 T=0.18
P350A	23903025	CONNECTOR, SOCKET, B-B 25P 1.5MM JDV-R25LB-10-1
P350B	23368634	CONNECTOR, PLUG, B-B 1.5MM 25P, JDV-PS25LB-10-1
P503A	23903024	CONNECTOR, SOCKET, B-B 20P 1.5MM JST-R20LB-10-1
P503B	23368633	CONNECTOR, PLUG, B-B 1.5MM 20P, JST-JDV-PS20LB-10-1
P504A	23903025	CONNECTOR, SOCKET, B-B 25P 1.5MM JDV-R25LB-10-1
P504B	23368634	CONNECTOR, PLUG, B-B 1.5MM 25P, JDV-PS25LB-10-1
P611	23368578	CONNECTOR, PLUG, 4P 2.5MM G JST-EH, B4B-EH-F1-TV4
P650A	23367072	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B12B-EH-F1A
P650B	23367072	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B12B-EH-F1A
P661	23363607	JACK, HEAD PHONE, 3.5MM
P706A	23368579	CONNECTOR, PLUG, 5P 2.5MM G JST-EH, B5B-EH-F1-TV4
P706B	23368578	CONNECTOR, PLUG, 4P 2.5MM G JST-EH, B4B-EH-F1-TV4
P707A	23368584	CONNECTOR, PLUG, 3P2.5MM W EH-JST S3B-EH
P708A	23368580	PLUG, 6P 2.5MM G JST-EH, B6B-EH-F1-TV4
P708B	23368580	PLUG, 6P 2.5MM G JST-EH, B6B-EH-F1-TV4
P709A	23368580	PLUG, 6P 2.5MM G JST-EH, B6B-EH-F1-TV4
P709B	23368580	PLUG, 6P 2.5MM G JST-EH, B6B-EH-F1-TV4
P713	23164787	CONNECTOR, PLUG, 7P
P714	23164787	CONNECTOR, PLUG, 7P
P715	23164787	CONNECTOR, PLUG, 7P
P800	23368013	CONNECTOR, PLUG, 2P 11.88MM W VT-JST
⚠ P801	23372052	POWER CORD, 250V2.5A
P914A	23368579	CONNECTOR, PLUG, 5P 2.5MM G JST-EH, B5B-EH-F1-TV4
P914B	23368579	CONNECTOR, PLUG, 5P 2.5MM G JST-EH, B5B-EH-F1-TV4
P915A	23368579	CONNECTOR, PLUG, 5P 2.5MM G JST-EH, B5B-EH-F1-TV4
P915B	23368579	CONNECTOR, PLUG, 5P 2.5MM G JST-EH, B5B-EH-F1-TV4

Location No.	Parts No.	Description
P917A	23367069	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A
P917B	23367069	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A
P922B	23368578	CONNECTOR, PLUG, 4P 2.5MM G JST-EH, B4B-EH-F1-TV4
P924B	23368580	PLUG, 6P 2.5MM G JST-EH, B6B-EH-F1-TV4
PB11A	23368578	CONNECTOR, PLUG, 4P 2.5MM G JST-EH, B4B-EH-F1-TV4
PB12A	23368580	PLUG, 6P 2.5MM G JST-EH, B6B-EH-F1-TV4
PB13A	23368579	CONNECTOR, PLUG, 5P 2.5MM G JST-EH, B5B-EH-F1-TV4
PF01	23902655	CONNECTOR, B-B 15P
PT01	23367724	CONNECTOR, PLUG B-B 15P
PU01	23902655	CONNECTOR, B-B 15P
PU02	23902655	CONNECTOR, B-B 15P
PU03	23902852	CONNECTOR, SOCKET, B-B 7P
PV01	23365818	CONNECTOR, JACK, SVHS, HOSIDEN, TCS7719
PV02	23023022	JACK, PIN 12P, IJB12-TI
PV03	23023021	CONNECTOR, JACK, PIN 8P
PV15A	23367068	PLUG, 8P 2.5MM G JST-EH, B8B-EH-F1-TV4
PV15B	23368587	CONNECTOR, PLUG, 8P 2.5MM W EH-JST, S8B-EH
PV40	23023063	JACK, 1S3P DSH, DSK-0088-1
⚠ S801	23344474	SWITCH, PB-3(2TN) CANAL
SA01	23145227	SWITCH, PUSH, 1C1P
SA02	23145227	SWITCH, PUSH, 1C1P
SA03	23145227	SWITCH, PUSH, 1C1P
SA04	23145227	SWITCH, PUSH, 1C1P
SA06	23145227	SWITCH, PUSH, 1C1P
SA07	23145227	SWITCH, PUSH, 1C1P
⚠ SR80	23146574	RELAY, DLS5D1-O(M) 0.15W
⚠ SR81	23146564	RELAY, DC12V, TV5, DG-3
⚠ V901A	23903148	SOCKET, ISH-44S-E ICE #5
⚠ V902A	23903148	SOCKET, ISH-44S-E ICE #5
⚠ V903A	23903148	SOCKET, ISH-44S-E ICE #5
W661	23351214	SPEAKER, 120X120 8-OHM 20W, SPK-1438AO
W662	23351214	SPEAKER, 120X120 8-OHM 20W, SPK-1438AO
X4402	23153721	CERAMIC RESONATOR, 503KHZ
X4420	23153721	CERAMIC RESONATOR, 503KHZ
XA01	23153497	CERAMIC RESONATER, TCR1080AM
XT01	23153930	CRYSTAL, 12.000 25PPM 40OHM 7PF
Z401	23140203	SPARK GAP, 2.0-3.0KV C-010, AG20PC152F-L3N
⚠ Z410	23110841	FOCUS PACK, TPA6030
Z410A	23505177	CABLE, FOCUS
⚠ Z450	24083013	COMPOSITE PARTS, CR-BLOCK, TPA5010AH
Z450A	23501755	ANODE CABLE, 400LD FBT-C
Z470	23144605	PROTECTOR, PRT SERIES, DC60V/AC90V 2000MA
Z801	23148734	MODULE, PROTECTOR, HIC1026A
Z810	23144479	PROTECTOR, 125V 4.0A
Z831	23144603	PROTECTOR, PRT SERIES, DC60V/AC90V 1000MA
Z871	23144541	PROTECTOR, 491SERIES, 125V 3R15A
Z872	23144542	PROTECTOR, 491SERIES, 125V 4A
Z873	23144542	PROTECTOR, 491SERIES, 125V 4A
Z874	23144542	PROTECTOR, 491SERIES, 125V 4A
Z875	23144542	PROTECTOR, 491SERIES, 125V 4A
Z876	23144543	PROTECTOR, 491SERIES 125V 5A
Z917	23103840	FERRITE CORE, TFE1013
Z922	23103840	FERRITE CORE, TFE1013
Z923	23103840	FERRITE CORE, TFE1013
Z924	23103840	FERRITE CORE, TFE1013
ZC01	23148036	MODULE, D-CONVER, MDCC21 (43CVR9UR)
ZC01	23148038	MODULE, MDCC20, D-CONVER (50CVR9UR)
ZY01	23148035	MODULE, MVPC08, VIDEO 3DYCS
ZY03	23148027	SCAN CONVERTER MODULE, MDFS03

PC BOARD ASSEMBLIES

✻ M011Z	23788963	DPC BOARD, PD1332-1
✻ M012Z	23788964	BEP BOARD, PD1332-2
✻ M021Z	23788119	FRONT BOARD, PD0954-1
✻ M022Z	23788120	RMT BOARD, PD0954-2
✻ M031Z	23761454	CRTD/R BOARD, PD1577-1
✻ M032Z	23761455	CRTD/G BOARD, PD1577-2
✻ M033Z	23761456	CRTD/B BOARD, PD1577-3
✻ M034Z	23761457	SVM/G BOARD, PD1577-4
✻ M035Z	23761458	SVM/R BOARD, PD1577-5
✻ M036Z	23761459	SVM/B BOARD, PD1577-6
✻ U401	23788877	DEF/CONV BOARD, PD1316 (43CVR9UR)
✻ U401	23788879	DEF/CONV BOARD, PD1318 (50CVR9UR)
✻ U601	23788880	WOW BOARD, PD1319
✻ U801	23788110	POWER BOARD, PD0957
✻ U901	23788882	SIGNAL BOARD, PD1321 (43CVR9UR)
✻ U901	23788884	SIGNAL BOARD, PD1323 (50CVR9UR)
✻ UM01	23788127	TEXT-P2 BOARD, PD0963

PICTURE TUBE

⚠ V901R	23071944	COUPLING BLOCK R (43CVR9UR)
⚠ V901R	23071948	COUPLING BLOCK R (50CVR9UR)
⚠ V902G	23071945	COUPLING BLOCK G (43CVR9UR)
⚠ V902G	23071949	COUPLING BLOCK G (50CVR9UR)
⚠ V903B	23071946	COUPLING BLOCK B (43CVR9UR)
⚠ V903B	23071950	COUPLING BLOCK B (50CVR9UR)

TUNER

H0011	23321425	TUNER, EC954W1

ACCESSORIES

K902	23306511	REMOCON HAND UNIT IR, CTVPAL, CT-90169
Y101E	23566008	OWNER'S MANUAL, ENGLISH, 43CVR9UR/50CVR9UR
Y101R	23566010	OWNER'S MANUAL, RUSSIAN, 43CVR9UR/50CVR9UR
Y105	23436569	CASTER UKEZARA, 40W30E
Y109	23943846	BAG, POLY

CABINET PARTS

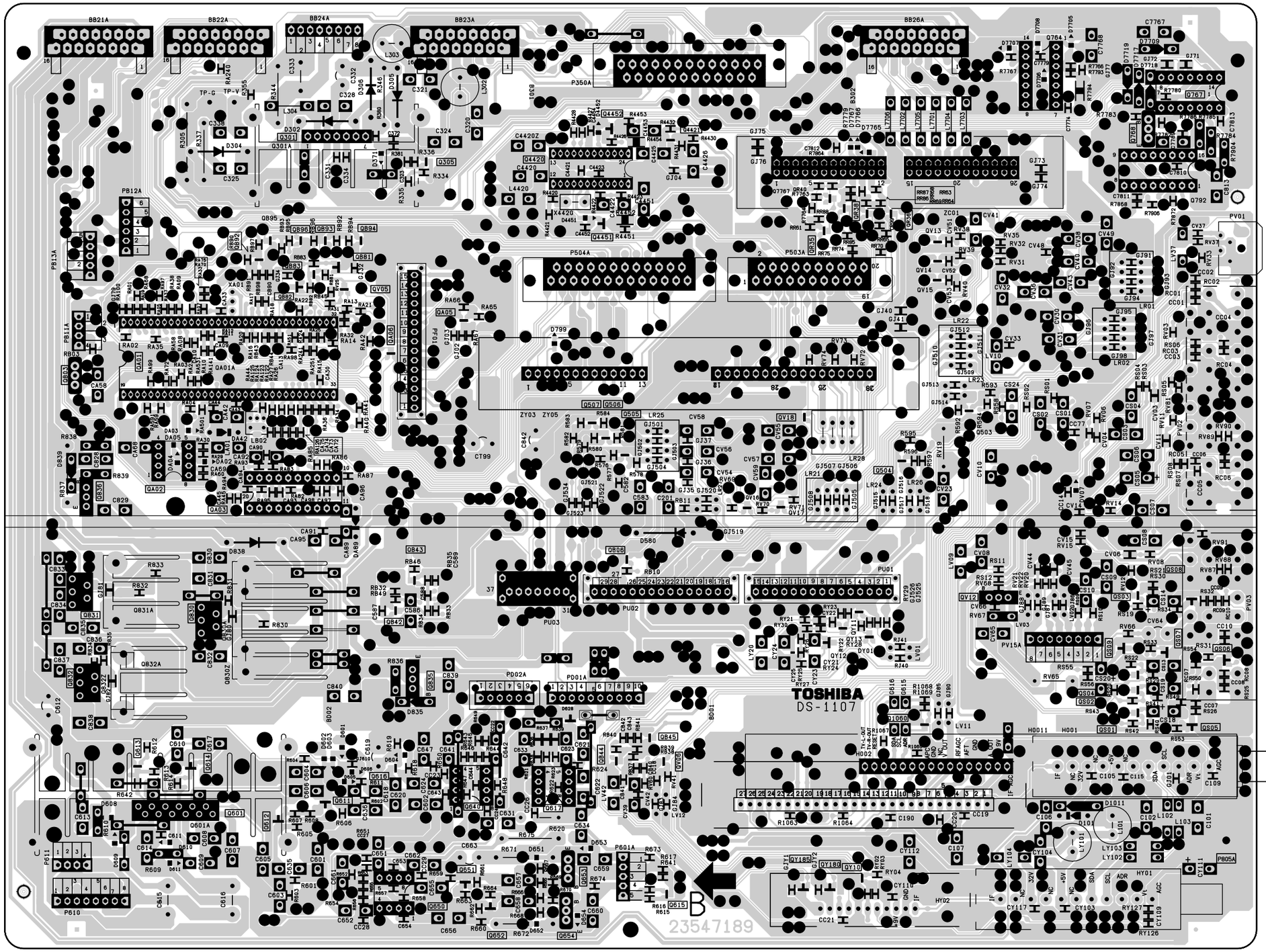
A101	23411595	CABINET, WOOD CABINET KAN (43CVR9UR)
A101	23411931	CABINET, WOOD CABINET KAN (50CVR9UR)
A113	23845554	WIRE CLIP
A151	23064582	CARTON, CASE BOTTOM (43CVR9UR)
A151	23064648	CARTON, CASE BOTTOM (50CVR9UR)
A152	23946232	PACKING, BOTTOM PACKING (43CVR9UR)
A152	23946277	PACKING, BOTTOM PACKING (50CVR9UR)
A153	23531107	PACKING, PROTECTIVE SHEET (43CVR9UR)
A154	23946302	PACKING, PACKING
A171	23437809	CASTER, CASTER
A172	23436768	HANDLE, HANDLE
A201	23530640	COVER, FRONT PANEL ASSY (43CVR9UR)
A201	23530641	COVER, FRONT PANEL ASSY (50CVR9UR)
A203	23532065	COVER, FRONT COVER ASSY (43CVR9UR)
A203	23532062	COVER, FRONT COVER ASSY (50CVR9UR)
A204	23527299	GRILLE, FRONT GRILE ASSY (43CVR9UR)
A204	23527305	GRILLE, FRONT GRILE ASSY (50CVR9UR)
A205	23530630	COVER, COVER SW ASSY(TSP)
A206	23448658	CASE, CASE DOOR ASSY(TSP)
A207	23532068	COVER, COVER FRONT ASSY

Location No.	Parts No.	Description
A241	23445750	BUTTON, BUTTON POWER
A242	23836492	SPRING
A246	70391670	SCREW, BITTS 2X8 SZN
A263	23451868	PUSH CATCH
A264	70391466	SCREW, PPC-E-TTB 2.0X7.0-SZN
A282	23077253	BRACKET, SCREEN (43CVR9UR)
A283	23077254	BRACKET, SCREEN (43CVR9UR)
A401	23540755	COVER, MIRROR COVER (43CVR9UR)
A401	23540930	COVER, MIRROR COVER (50CVR9UR)
⚠ A402	23540749	COVER, BACK BOARD (43CVR9UR)
⚠ A402	23530111	COVER, BACK BOARD (50CVR9UR)
A431	23845800	WIRE HOLDER, NYLON66 D6.8
A432	23035412	SCREW, BTB4X12 SZN
A505	72471068	SCREW, 4X12
A506	23035412	SCREW, BTB4X12 SZN
A507	23035412	SCREW, BTB4X12 SZN
A508	23035412	SCREW, BTB4X12 SZN
A512	23035412	SCREW, BTB4X12 SZN
A521	23035412	SCREW, BTB4X12 SZN
A533	23037312	SCREW, BTBW3X12SZN
A534	23037312	SCREW, BTBW3X12SZN
A701	23067357	CARTON, CASE TOP (43CVR9UR)
A701	23067362	CARTON, CASE TOP (50CVR9UR)
A702	23946231	PACKING, TOP PACKING (43CVR9UR)
A702	23946276	PACKING, TOP PACKING (50CVR9UR)
A703	23845450	JOINT
A706	23943008	POLYETHYLENE BAG (43CVR9UR)
K501	23311923	SCREEN, 43KLA LENTICULAR SHEET, SCREEN43KLAL (43CVR9UR)
K501	23311934	SCREEN, 50KLE LENTICULAR SHEET, SCREEN50KLEL (50CVR9UR)
K502	23311924	SCREEN, 43KLA FRESNEL SHEET, SCREEN43KLAF (43CVR9UR)
K502	23430799	SCREEN, FRENSNEL SHEET, 50KKP (50CVR9UR)
K601	23405219	MIRROR, 43MS 860/580x600/75 T3 (43CVR9UR)
K601	23405220	MIRROR, 50MS (50CVR9UR)

Location No.	Parts No.	Description

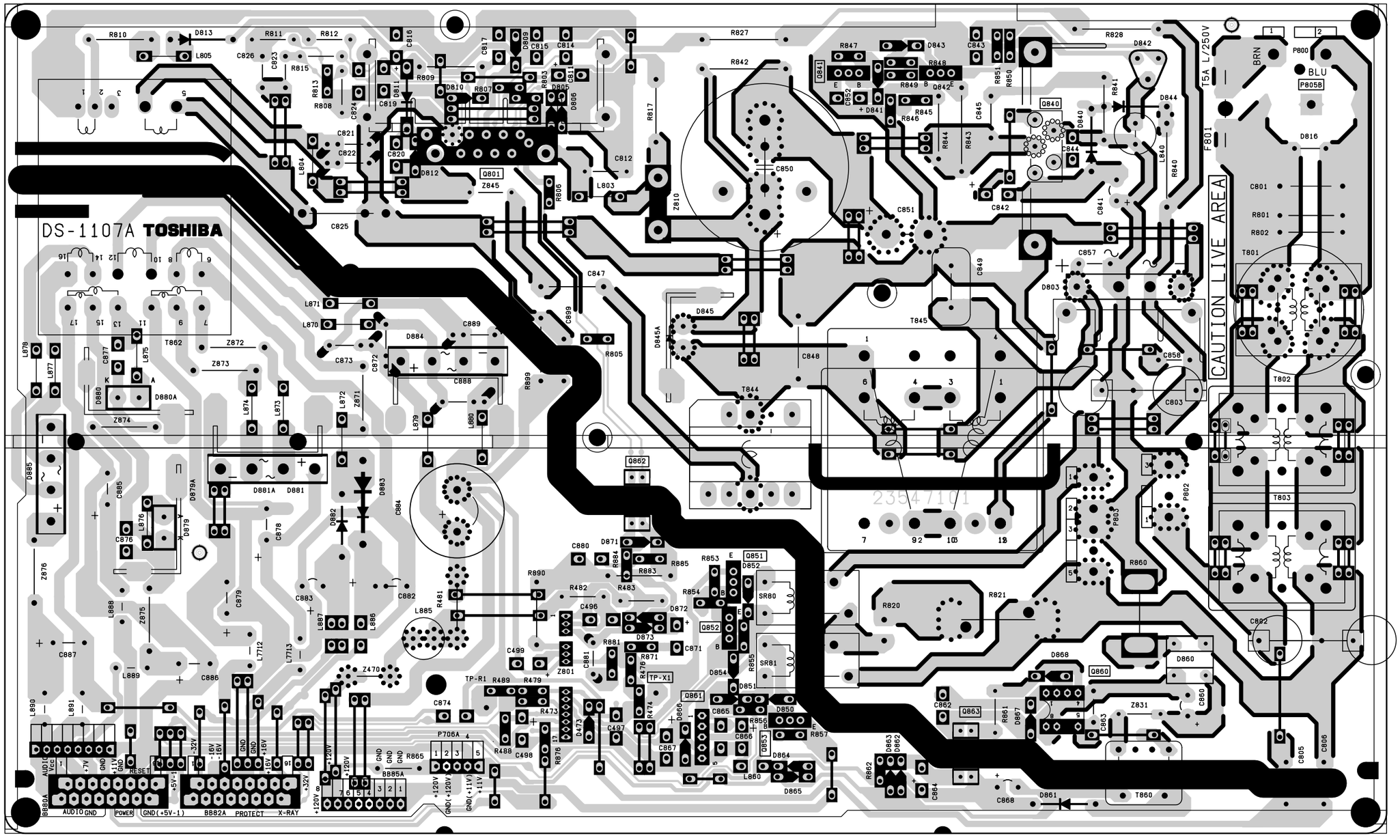
SIGNAL BOARD PD1321 (43")
SIGNAL BOARD PD1323 (50")

BOTTOM (FOIL) SIDE



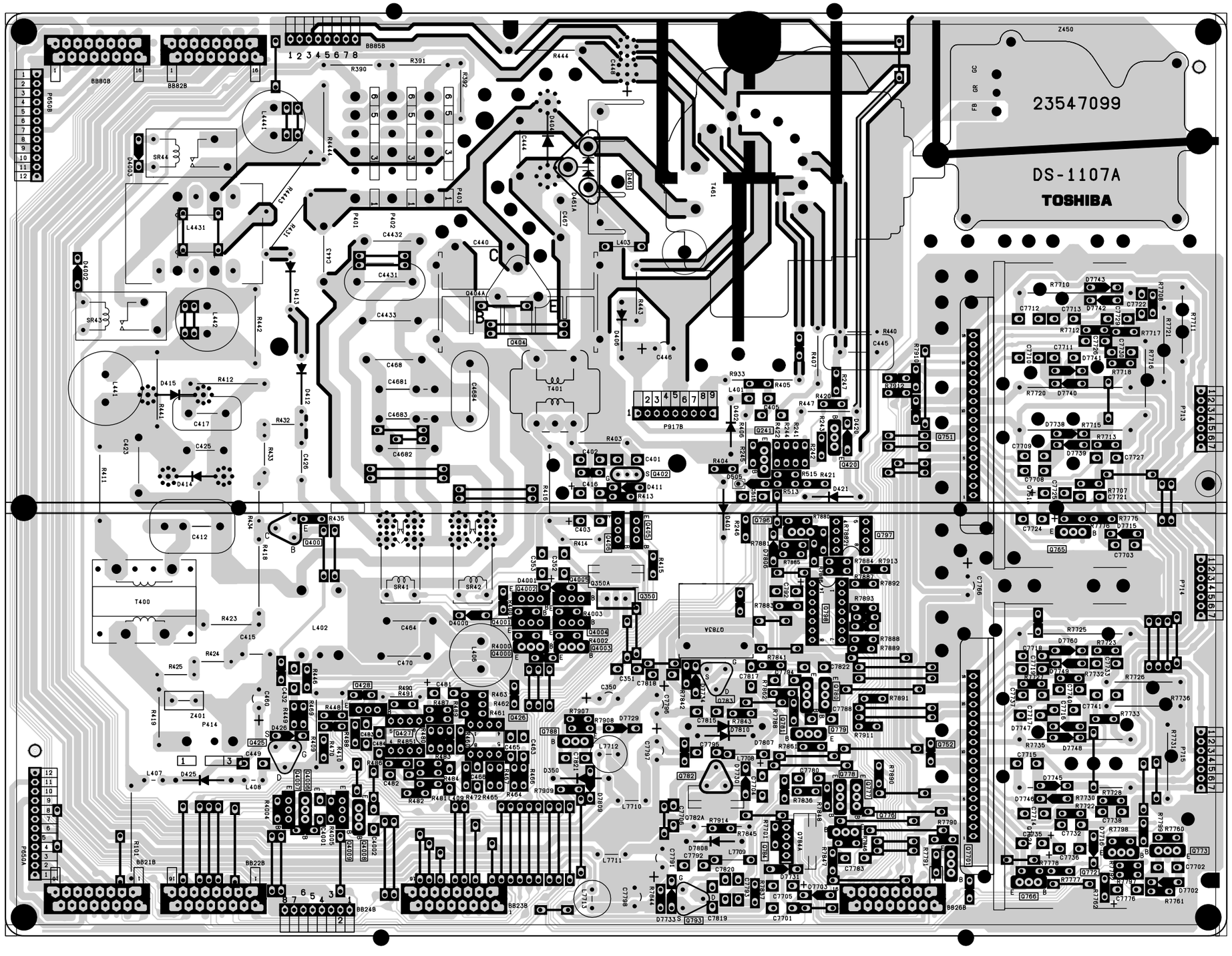
POWER BOARD PD0957

BOTTOM (FOIL) SIDE



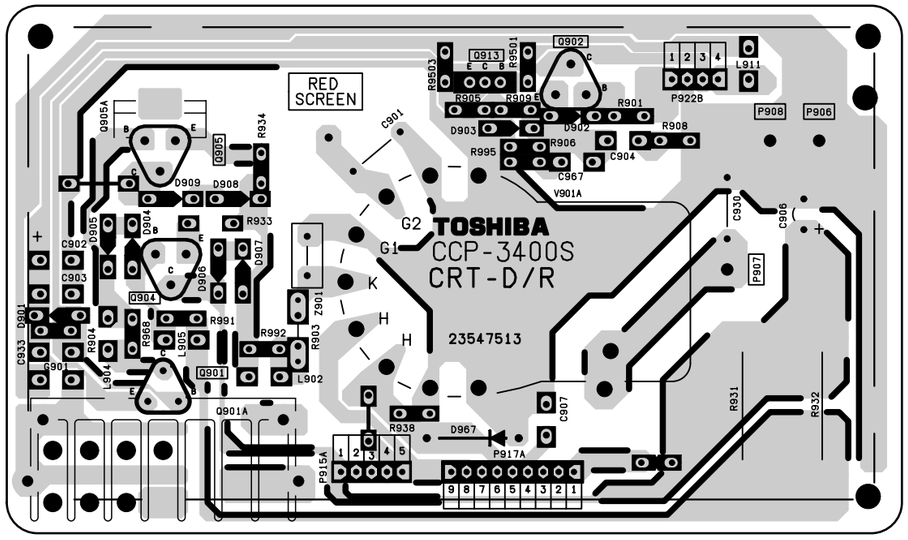
DEF/CONV BOARD PD1316 (43")
DEF/CONV BOARD PD1318 (50")

BOTTOM (FOIL) SIDE



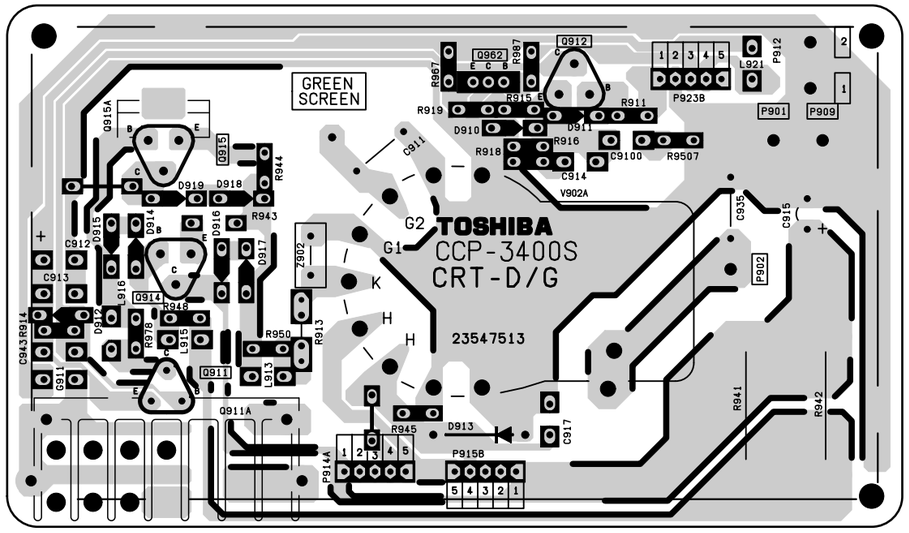
CRT-D/R BOARD PD1577-1

BOTTOM (FOIL) SIDE



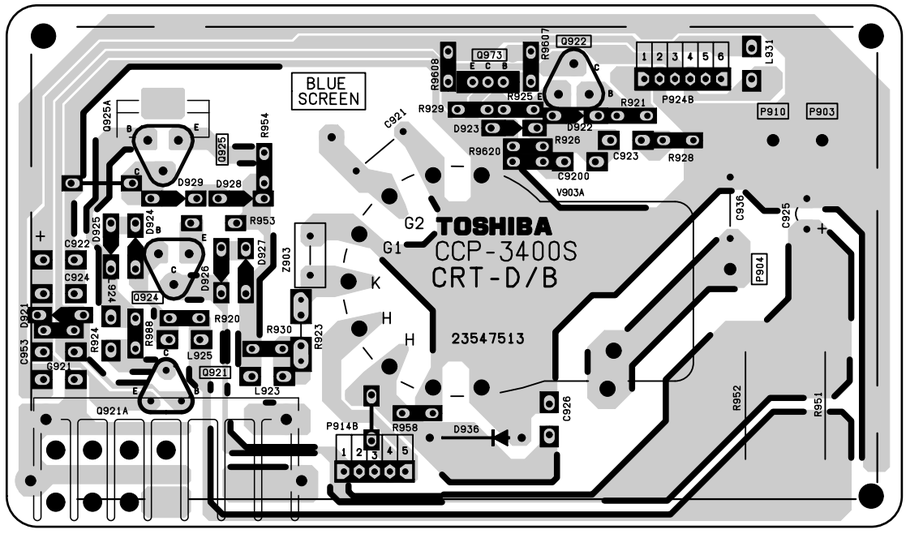
CRT-D/G BOARD PD1577-2

BOTTOM (FOIL) SIDE



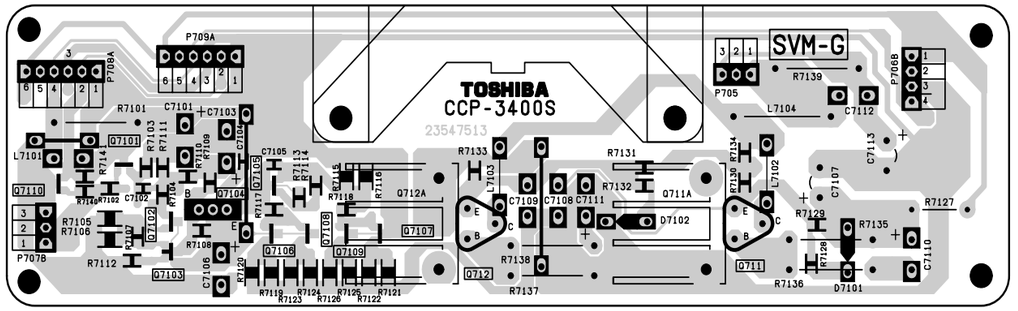
CRT-D/B BOARD PD1577-3

BOTTOM (FOIL) SIDE



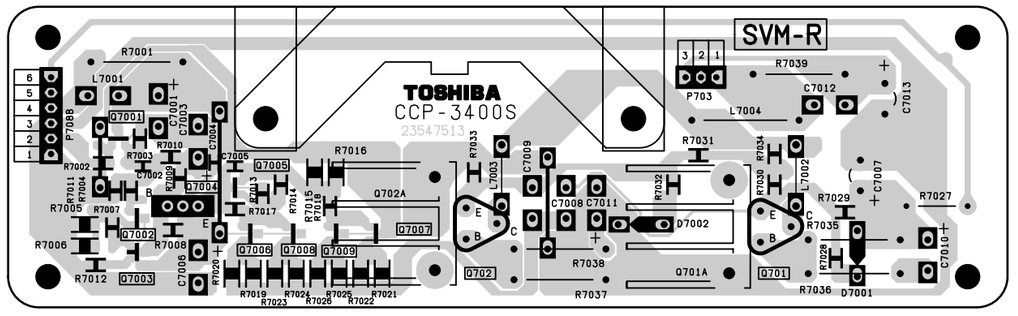
SVM-G BOARD PD1577-4

BOTTOM (FOIL) SIDE



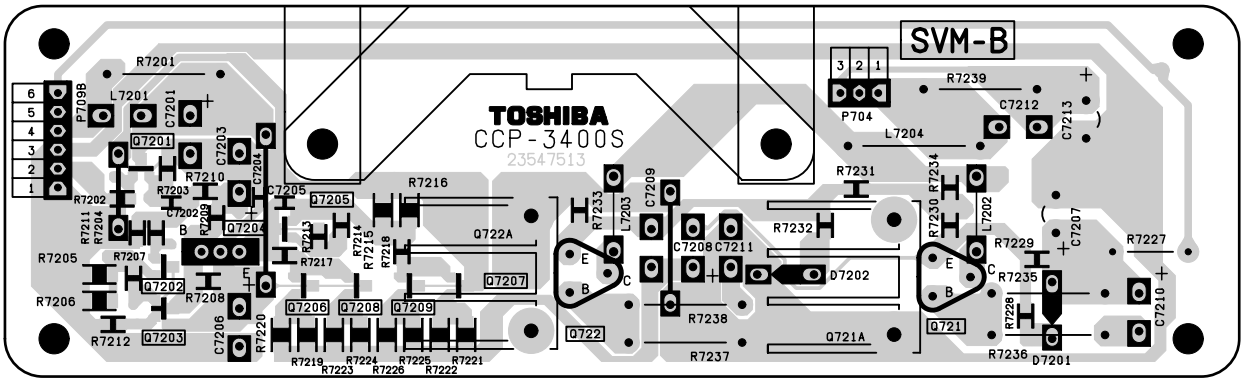
SVM-R BOARD PD1577-5

BOTTOM (FOIL) SIDE



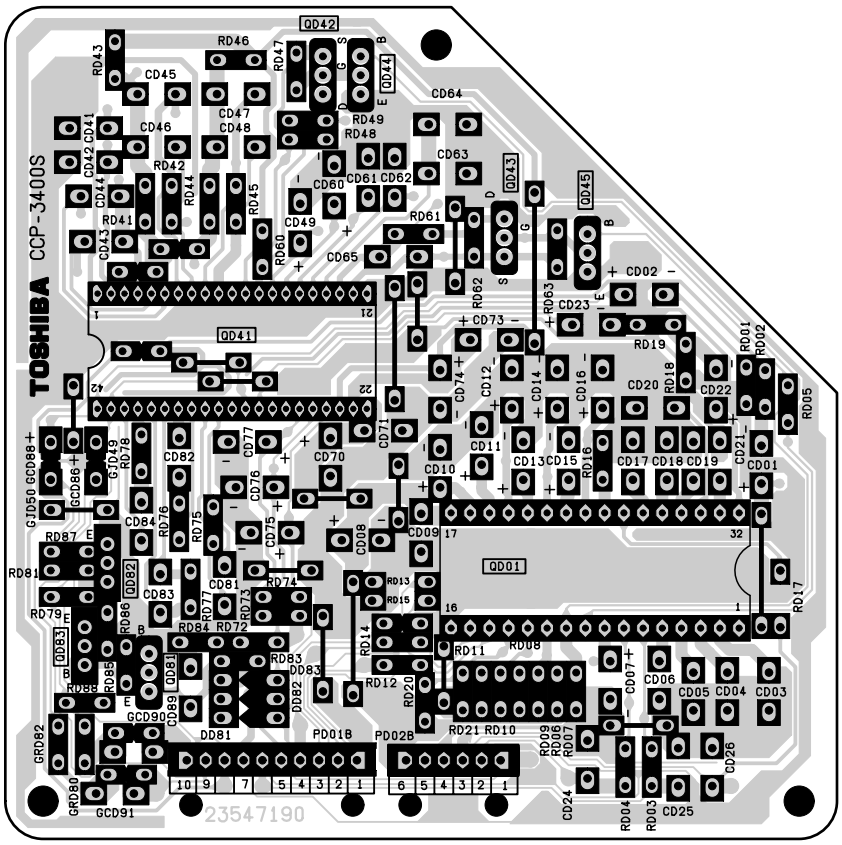
SVM-B BOARD PD1577-6

BOTTOM (FOIL) SIDE



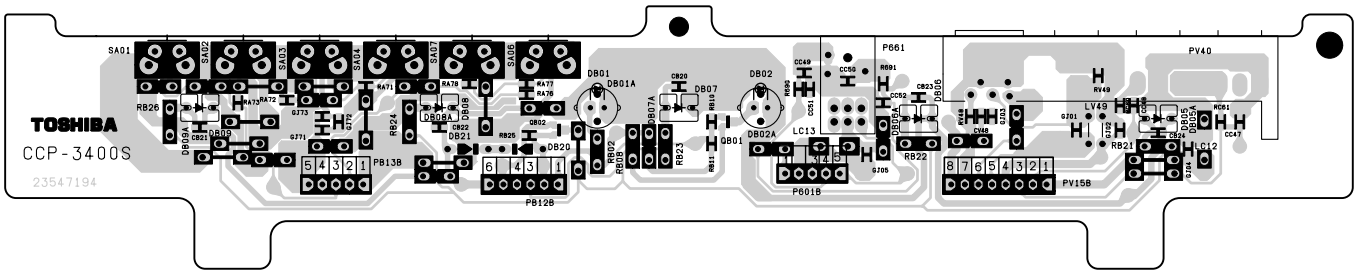
WOW BOARD PD1319

BOTTOM (FOIL) SIDE



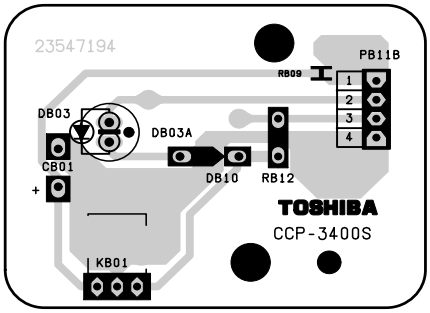
FRONT BOARD PD0954-1

BOTTOM (FOIL) SIDE



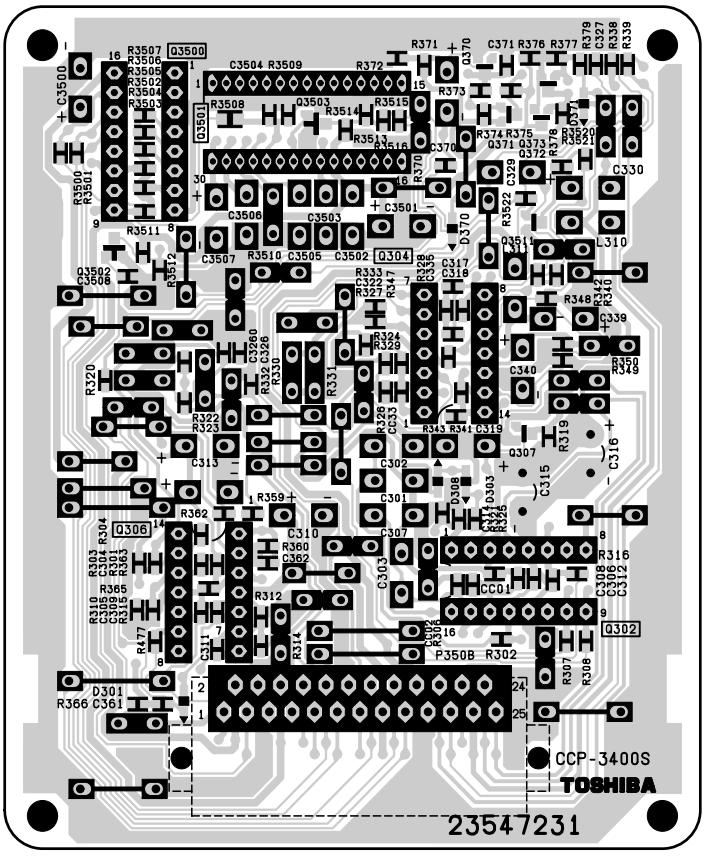
RMT BOARD PD0954-2

BOTTOM (FOIL) SIDE



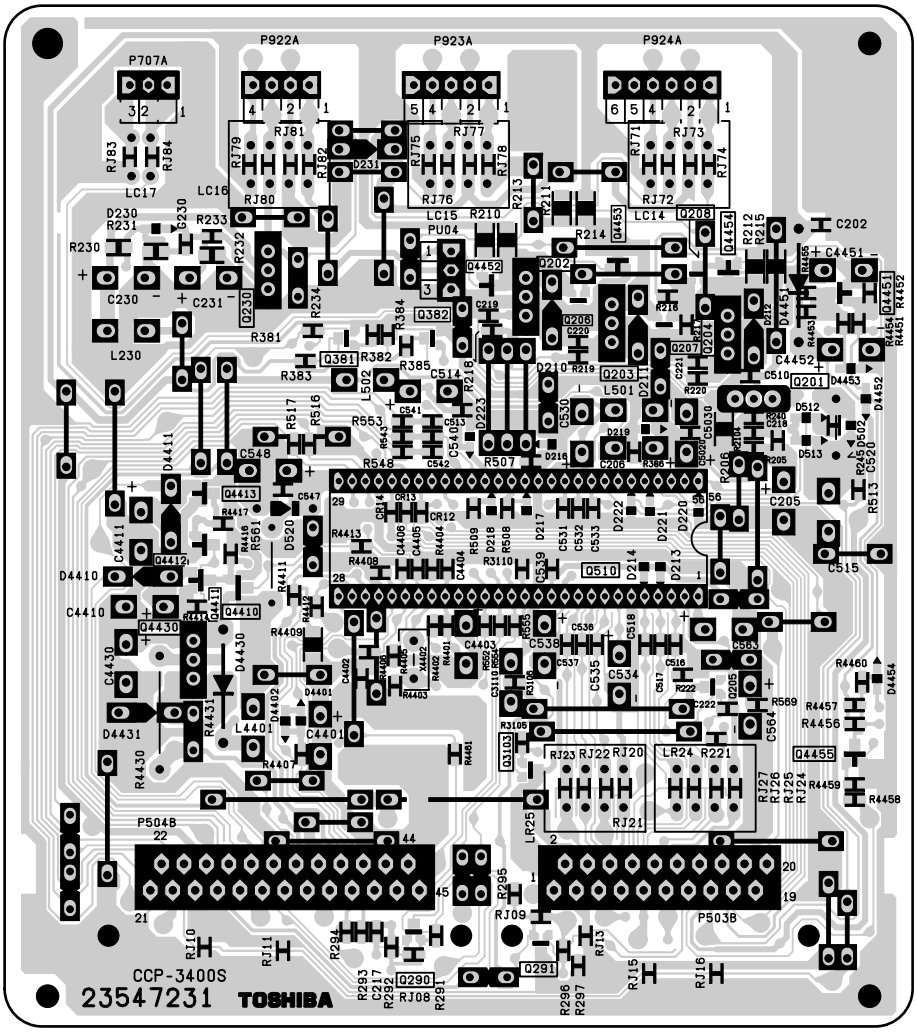
DPC BOARD PD1332-1

BOTTOM (FOIL) SIDE



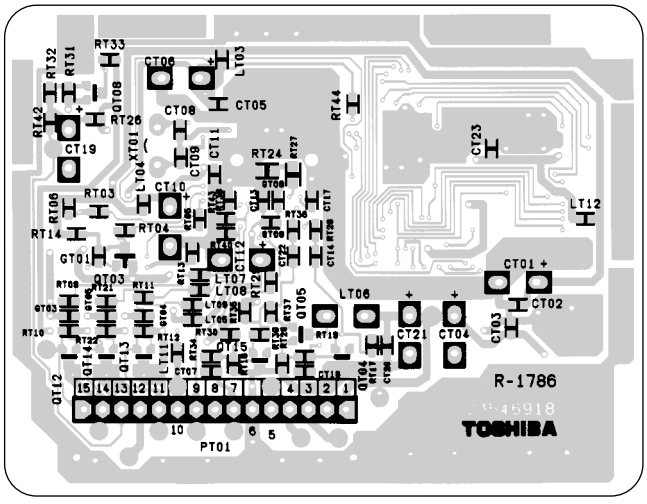
BEP BOARD PD01332-2

BOTTOM (FOIL) SIDE



TEXT-P2 BOARD PD0963

BOTTOM (FOIL) SIDE



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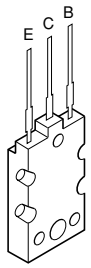
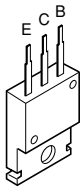
TERMINAL VIEW OF TRANSISTORS

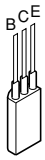
① 2SD2253
(old)
2SC5243



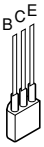
② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A



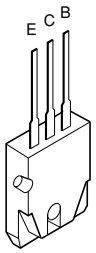
③ 2SC752GTM
2SC2482
2SC2655
2SC4721P



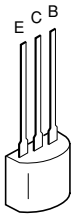
④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335



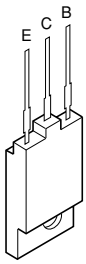
⑤ 2SA1788



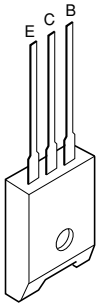
⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201



⑦ 2SD1554
2SD2253
2SD1556
2SC5143
2SD2553
2SC5144



⑧ ON4409



SCHEMATIC DIAGRAM

MODEL : 43CVR9UR / 50CVR9UR

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

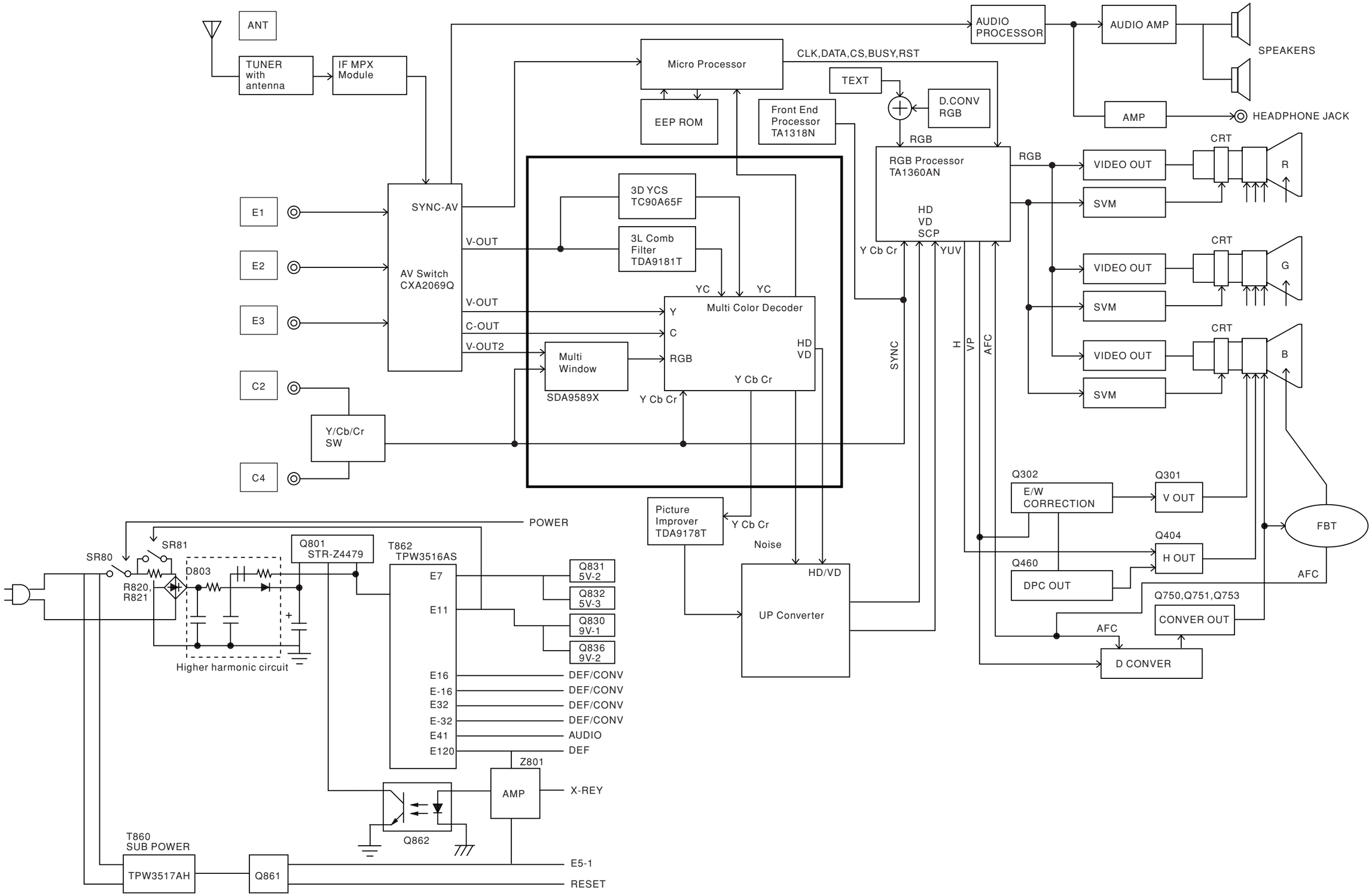
NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt 10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   —|(+)|— Electolytic capacitor —|(M)|— Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage 220 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

■ SCHEMATIC DIAGRAM STRUCTURE:

- SIGNAL Circuit
  - OTHERS [SHEET - 1/9] 1/20
  - AV [SHEET - 2/9] 2/20
  - SOUND [SHEET - 3/9] 3/20
  - IF [SHEET - 4/9] 4/20
  - M-CON [SHEET - 5/9] 5/20
  - FEP / V-OUT OTHER [SHEET - 6/9] 6/20
  - D-CONV [SHEET - 7/9] 7/20
  - REGU-OUT [SHEET - 8/9] 8/20
  - 3DYCS / OTHER [SHEET - 9/9] 9/20
- DEF / CONV. Circuit
  - (1/3) [SHEET - 1/3] 10/20
  - (2/3) [SHEET - 2/3] 11/20
  - (3/3) [SHEET - 3/3] 12/20
- BEP Circuit 13/20
- DPC Circuit 14/20
- POWER Circuit 15/20
- CRT-D(for HD) / SVM Circuit
  - (1/2) [SHEET - 1/2] 16/20
  - (2/2) [SHEET - 2/2] 17/20
- SRS-WOW Circuit 18/20
- FRONT-IN / RMT-IN Circuit 19/20
- M-TEXT-P2 Circuit 20/20

CIRCUIT BLOCK DIAGRAM



SPECIFICATIONS

MODEL		43CVR9UR	50CVR9UR
Rated voltage		∼ 220 – 240 V 50 Hz	∼ 220 – 240 V 50 Hz
Power consumption (at ∼ 220 V, 50 Hz)		260 W (1.4 watts at standby, 0 watt at ⏻I switch off)	260 W (1.4 watts at standby, 0 watt at ⏻I switch off)
Dimensions (Width × Depth × Height)		944 mm × 541 mm × 1,287 mm	1,092 mm × 575 mm × 1,342 mm
Mass		xxx kg	xxx kg
Screen size		Type 43 (108 cm)	Type 50 (126 cm)
Television system (Aerial input)	Channel coverage	**System** / **VHF** / **UHF** / **CATV (Channels)** PAL B/G (CCIR) 2 – 12 21 – 69 X ~ Z+2, S1 ~ S41 PAL I (UK) — 21 – 69 — PAL D/K (CHINA) 1 – 12 13 – 57 Z–1 ~ Z–38 SECAM B/G (CCIR) 2 – 12 21 – 69 X ~ Z+2, S1 ~ S41 SECAM D/K (OIRT) 1 – 12 21 – 69 X1 ~ X19 NTSC M (US) 2 – 13 14 – 69 A–6 ~ A–1, A ~ W, AA ~ ZZ, AAA, BBB NTSC M (JAPAN) 1 – 12 13 – 62 M1 ~ M10, S1 ~ S41	
	Special RF signal	**Color system** / **Sound system** NTSC4.43 5.5/6.0/6.5 MHz PAL 60Hz 5.5/6.0/6.5 MHz	
Color system		PAL/SECAM/NTSC4.43/NTSC3.58	
Audio power		20 W + 20 W (10% THD)	
Accessories		• Remote control 1 • Battery (R03, AAA) 2 • Caster tray 4	

* Please refer to owner's manual in detail.

– END –

TOSHIBA CORPORATION